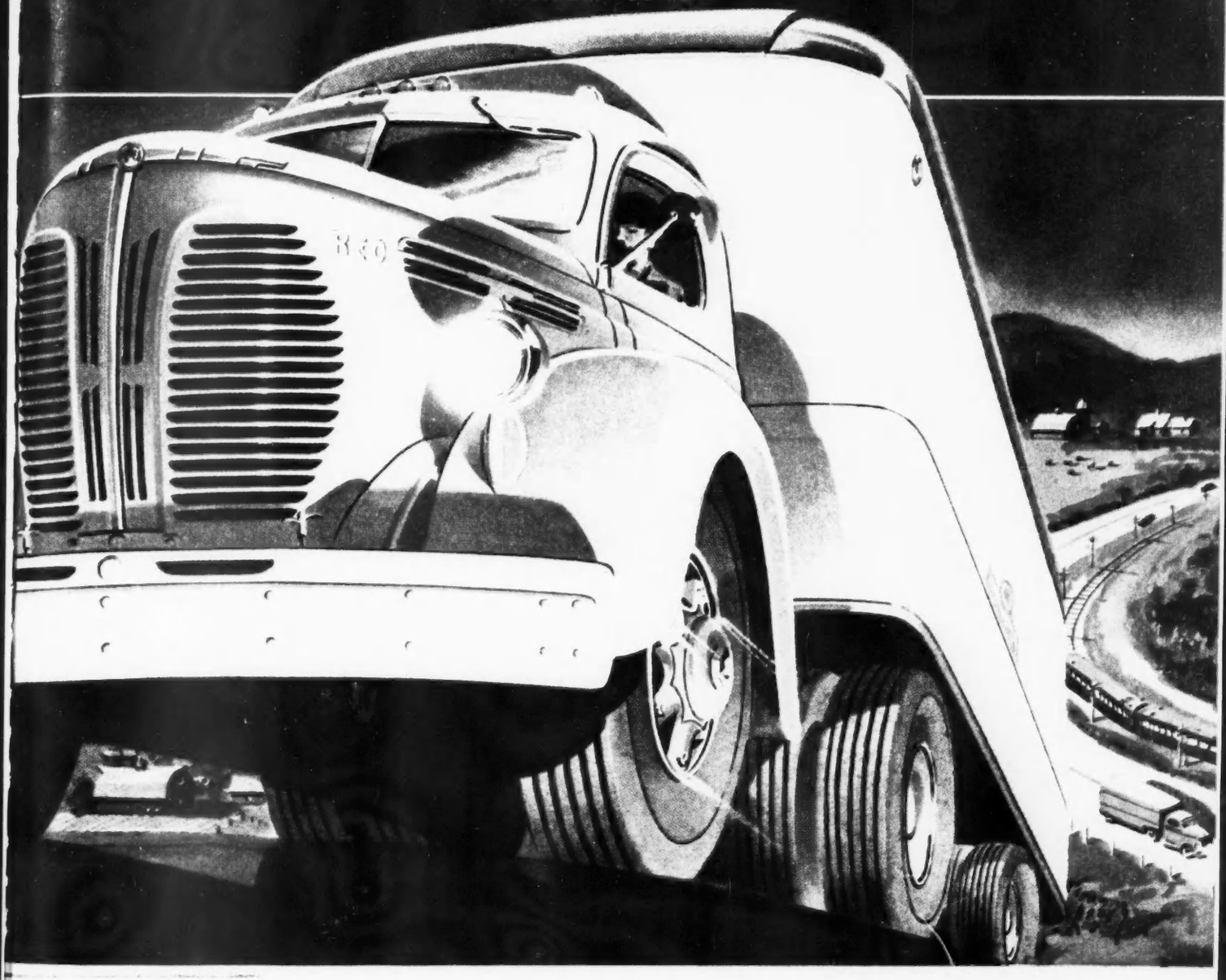
COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

MARCH 1946



For Distinguished Performance . . . STANDARDIZE ON

Today's big, powerful Reo trucks and tractors are favorites in the motor carrier industry, where equipment is judged solely on performance and ability to show a profit on every hauling job. Reo is *all truck* in every part. The massive cold-riveted frame, sturdy axles, springs and wheels are built to carry the load! The precision-built engine, with its many fine features, is designed to deliver the load on time and at low cost! Get the facts and you'll standardize on Reo. Built to fit today's transportation needs, Reo equipment is now being delivered through a nation-wide sales and service organization of factory-operated branches, distributors and dealers. REO MOTORS, INC., Lansing 20, Mich.

REO

1904 • AMERICA'S TOUGHEST TRUCK • 1946

Why do so many FLEET OWNERS standardize on DODGE *Job-Rated* TRUCKS?

DODGE *Job-Rated* TRUCKS
FIT THE JOB... LAST LONGER

• FLEET OWNERS give three reasons for *standardizing* on Dodge *Job-Rated* trucks:

1. The greater efficiency and economy of a truck engineered and built *to fit the job.*
2. The intelligent, courteous and reliable *service* they get from the dependable, widespread Dodge dealer organization.
3. The ready and universal availability of factory-engineered parts . . . a fact particularly appreciated during the recent war.

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DODGE DIVISION, CHRYSLER CORPORATION

SEE YOUR DODGE DEALER . . . *NOW!*

Let him help you choose the *right* Dodge *Job-Rated* truck to handle *your* hauling job better, longer . . . and at low cost!

LISTEN TO THE MUSIC OF ANDRE KOSTELANETZ . . . WITH FAMOUS GUEST STARS . . . THURSDAYS, C.B.S., 9 P.M., E.T.

J.A.

COMMERCIAL CAR JOURNAL

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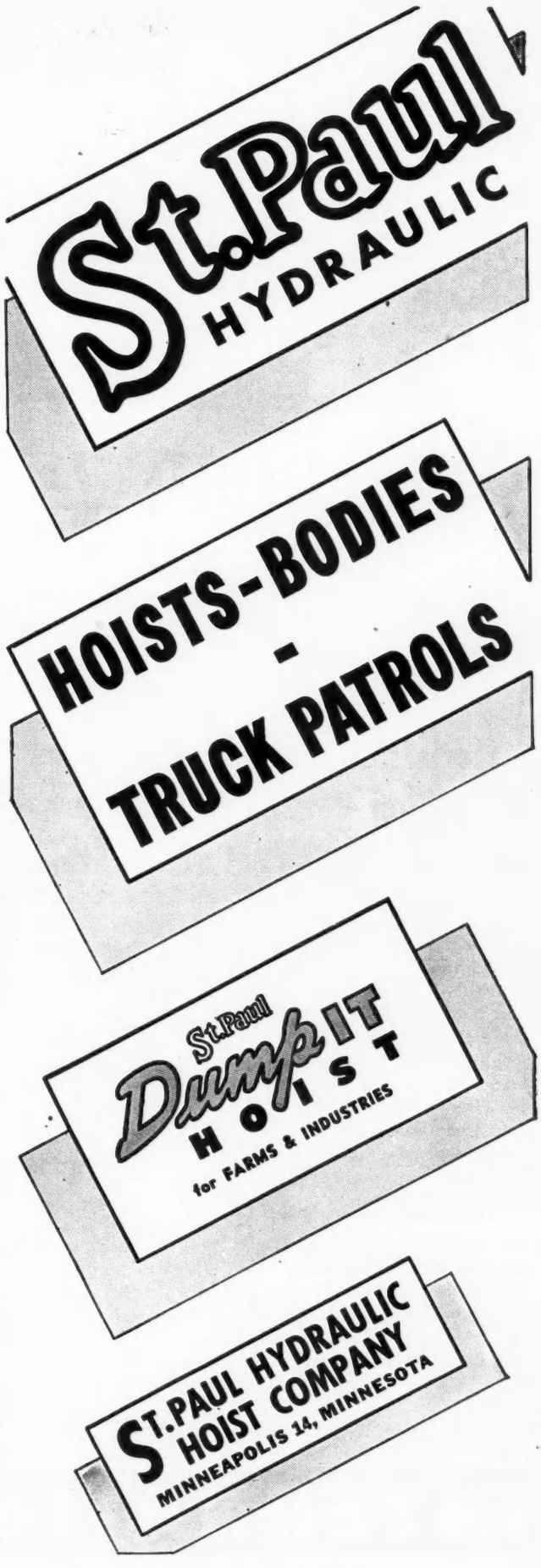


"Beechcrafters are doing their part," says the slogan on the trailer hauled by a heavy-duty International. And the International Wichita Branch does its part with service for Beech trucks every thousand miles.

RAILROAD 7½ MILES AWAY—

But Trucks Keep Plane Plant Functioning

Materials Hauled for More than 40 Million Pounds of Vital Production—That's Part of the Story

Some of the Internationals operated by Beech Aircraft Corporation to haul materials from the freight depot 7½ miles away, and to and from Beech warehouse.

ALMOST six years without a production shutdown because of a lack of materials or parts . . . the exacting delivery schedules of the Army and Navy air forces maintained . . . more than 40,000,000 pounds of a single critical war product manufactured.

That's the record of the Beech Aircraft Corporation, Wichita, Kansas, with the nearest railroad unloading facilities more than 7½ miles away.

Other Materials Handled, Too

But materials for production of the single critical war product aren't all that trucks hauled from freight depots to Beech factories and warehouses. Millions of pounds of other production and maintenance materials also had to be hauled, and thousands of tons of materials from Beech sub-contractors.

Never did a serious truck breakdown hamper production. Why? Well, early in the development of its truck fleet, Beech signed a service contract with International Harvester's Wichita Branch. One thousand miles of operation, and in the truck goes to the International shop for a check-up and servicing.

50 Trucks Operated

During peak production Beech operated 50 trucks, the smallest a half-ton pick-up, the largest, heavy-duty tractors that haul 30-foot trailers. Remember the hauls are short between freight depot, warehouses and the Beech factories. Yet, operating three shifts, the Beech fleet averaged 1,588 miles a day.

International takes pride in the part its trucks were able to play in helping Beech to come through with vital production.

Pride in this *additional* example of the dependable performance that explains why more heavy-duty Internationals have been purchased for civilian use in the last 14 years than any other make—

Pride in the typical International service supplied—

The kind of service supplied by all International Branches, which form the nation's largest company-owned truck-service organization, and by International Truck Dealers everywhere.

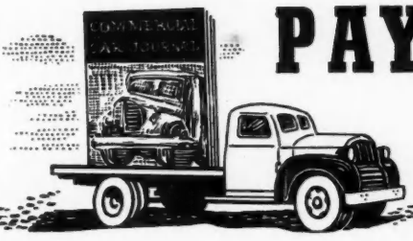
Motor Truck Division
INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue
Chicago 1, Illinois

LISTEN TO "HARVEST OF STARS" EVERY SUNDAY! NBC NETWORK

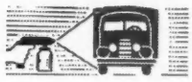
INTERNATIONAL

INTERNATIONAL Trucks

This Month's PAYLOAD



• ***Painting Pointers from a Neat Fleet***



This fleet often has been handed bouquets on the attractive appearance of its vehicles. Superintendent Winchell takes time out to tell how he keeps them looking as if they just came out of the factory, with inside cost dope. **Page 40**

• ***Remodelled "Barn" Makes Modern Fleet Shop***

Building material shortage didn't stymie this fleet. The management took over an old trolley barn, cleaned, patched, painted and, after installing some new equipment, moved in. Here are ideas for fleets preferring renovation. **Page 42**

• ***Additive Oils Not a Sludging Cure-All***

An oil expert concedes that heavy-duty oils have done a remarkable job in sustained, severe duty operations but provides laboratory and road test proof that three factors complicate the sludge problem in light-duty service. **Page 48**

• ***Training Program to Yield 1200 Shop Mechanics***

Automotive men in Richmond, Va., have organized a 4-yr. on-the-job mechanic training course that should more than take care of the manpower shortage in that area. State assisted, it's also tied-in with GI Bill of Rights. **Page 54**

• ***Job Breakdown Sheets—A Pattern for Maintenance Efficiency***

Here's a fleet that compiled its own tire service manual. Every operation was worked out in the most efficient manner, then outlined on what are called job breakdown sheets. Now there is no excuse for poor workmanship. **Page 62**

• ***A Report on Visits to 133 Fleets in Seven States***

Certain fleet operation problems are more acute now than during the war—replacement parts supply, for example. Just what fleets are doing to solve these problems is summarized in this article. Their methods may help you. **Page 110**

. . . AND in its first trucking case, the NWSB decided that increased wages may be used as a basis for increasing freight rates. For details on this and other pertinent government activities see "Washington Runaround" as reported by Gene Hardy on Page 84 . . . Truck manufacturers say that the new steel wage-price policy has "snafued" the production picture more than ever. You'll find the details in Leonard Westrate's "Detroit Dispatch," Page 39 . . . A new engine came into being during the war but all details were hushed up until now in the article entitled, "New Continentals Have War-Tested Improvements," Page 72 . . . Another interesting improvement is the Rotocap described in the article "Valve Rotating Cap Keeps Valve Seats Clean," Page 76 . . . Then there's that new brake that is self-adjusting—yes, it's a fact—see the article "Self-Adjustment Features New Hydraulic Brake," Page 78 . . . Those of you who have been waiting for improved transmissions, and who hasn't, don't miss "Spicer Offers 5-Speed Synchronized Transmissions," Page 70 . . . When you have brought yourself up to date on all these matters you will want to get some inside information on the cargo chauffeurs from Pete R. O'Leum's "Drivers, As I Know Them," Page 57 . . . While we're on the subject of drivers, see this month's Editorial, on Page 37. Those cowboys are bad medicine. Table of Contents is on Page 33.

EARS to the GROUND

Valve Burns Burn Fleets

An epidemic of burned intake valves has been sweeping the country. Fleet operators are inclined to blame gasoline, believing that it happens when they get a batch of very high octane gas by mistake. But expert investigators who are looking into the trouble have not pinned down the cause of the trouble. They say it occurs with different brands of gasoline, oil and in various makes of engines. Engines in heavy-duty service seem to be hardest hit. Occurrence is not consistent; failures may occur after 1000 miles or 20,000 miles, on brand new as well as old engines. In turn, higher road speeds, wartime valves, etc., have been suspected, but as each supposition was investigated it was knocked down. Even passenger cars have been reported with burned intake valves from the mid-west where distances are great and speed high. Until the experts come through with the solution, fleet operators are inclined to keep an eye on the gasoline they use.

Diesel Dido

Back before the war many a Ford truck found its way into the export market with a diesel engine. Now we hear—unofficially, of course—that Ford has been toying with the idea of using a diesel engine in domestic trucks wherever the customer wants it enough to pay the premium. This does not mean that Ford-diesel trucks are in the bag or about ready for announcement. It's simply a glimpse of what is doing behind the scenes.

Line on a New Liner

Fleet operators are familiar with cylinder liners that extend the full length of the sleeve. Campbell, Wyant and Cannon Foundries has developed a cylinder sleeve that is only a few inches in length and is installed at the top end of a cylinder. Cylinder corrosion and erosion—extreme wear—occur only at the top where the metal is exposed to products of combustion. Why, then, reasoned CWCF, extend the liner all the way and thereby use more of the expensive material than necessary? A major automotive manufacturer has been studying the short version with surprisingly interesting results. When the manufacturer decides to talk, we'll report further.

Landing Gear Lowdown

We have definite advice that a maker of hydraulic pumps plans introduction of a line of hydraulically-operated landing gear for heavy-duty trailers. It is assumed that this device will have novel features.

Overheads Under Way?

Ever since engineers began speculating on the use of aviation-grade gasolines, that is, around 100 octane, there has been a debate as to the desirability of going to overhead valve engines. Some of the experts have contended that only overhead valve design can get the most out of high octane fuel. It is of interest that the Continental R-600 series now being publicized has overhead valve construction. Don't be surprised if one or more of the other engine builders comes out with an overhead job.

High Speed Heavy-Duty

Federal Motor Truck is about ready to announce a new heavy-duty 6 to 8-ton unit that will be welcomed by long-distance, heavy, over-the-road haulers who demand speed, power, economy and extra payload capacity. It will be rated at 30,000 GVW and is said to be capable of 60 m.p.h. if you want it. It features one of Timken's new two-speed axles.

Torque-Armed Bantam

The Supercargo trailer model which American Bantam is getting ready, will feature the Bantam torque arm drive and spring suspension. This development permits the brake torque to be absorbed through the spring-type torque arms. A floating spring trunnion aids the absorption.

Absolutely, an Automatic

Although at the moment Ford is working with transmissions made available by its suppliers, it is significant that the engineering department has added a transmission development section headed by a well-known transmission specialist. This may well mean that Ford will have an automatic transmission on a selected model, produced by a supplier if an acceptable unit is available or designed and built by Ford if need be.

Diamond T's in May

Diamond T, our mid-west operative reports, will introduce some new truck models in May.

Another Solid Injector

The same sleuth says that Ex-Cell-O is about ready to talk about its new solid fuel injection system for gasoline engines. This was under wraps during the war. American Bosch, it will be remembered, has such a system. Perhaps now that peace is just around the corner the solid injection contenders will give operators a better idea of cost and how it will be balanced by greater economy and performance.

An Accessory and . . .

Eaton Mfg. Co. has some developments of unquestioned interest which have not yet been placed in production. One of these is a compact eddy current drive designed to provide a substantially constant, preferred speed for accessories such as the cooling fan, heating and ventilating fan, compressor, generator and windshield wiper. Variations in speed of engines reduce the efficiency of such accessories. The drive unit will eliminate variations in the speed of accessories. It can be mounted as a small unit on individual accessories, or as a large unit on the crankshaft for driving all accessories.

. . . a Fan Fixer, and . . .

Another Eaton development is an electro-magnetic clutch for fans, designed to engage and disengage automatically by thermostatic control. This arrangement permits maintenance of more uniform engine temperature and relieves the engine of a load when the fan is not needed for cooling. On large engines that load is upwards of 20 hp. Current required for operating the clutch is said to be relatively small.

. . . Less Work for Father

The third Eaton development is a power screw which may be used to shift gears, close doors, lift windows and to operate retractable landing gear of trailers. The screw is operated by a small reversible motor.

EDITORIAL

Glamour Boys of the Highways Sell Motor Transport Down the River

DID you read "Glamour Boys of the Highways" in the Feb. 23 issue of the *Saturday Evening Post?* If you haven't, dig up a copy and . . .

* * *

Read how the driver of a diesel truck on the West Coast "swooped down the mile-long grade in a full power dive"; how the driver "kicked out the gears and put her into free wheeling by releasing the clutch" so that by the time the "heavy load" (72,000 lb. gross) reached the bottom of the canyon the "speed was frightening." ("What would have happened," the author asks the glamourous driver, "if we'd blown a front tire on one of those dips?" "I don't think about it," the driver answers blithely, "but the chances are we would have landed in the ditch.")

* * *

Read the hilarious incident of how the drivers of trucks ganged up on two cops in a little "jerkwater town" who had handed out tickets for "speeding and coasting." (The drivers got back at the cops by shifting "into low low" and going through "every gear, gunning the motors.")

* * *

Read how the author of the article confesses that "the ride down the opposite side of the pass was an experience I wish to forget"; how the truck missed two other trucks on a narrow steel bridge at the foot of the grade by a margin which the driver "admitted was no more than a gnat's eyebrow."

* * *

Read how the truck "nearly hit" one of the "cars of men going to work."

Read how the drivers "don't pick up riders" but "sometimes stop for soldiers and sailors"; how the sailors have a habit of falling asleep and sliding about so that you have to "drag" them "off the controls."

* * *

In short, take a ride with one of the "glamour boys" on what *The Post* calls a "wild ride from Los Angeles to San Francisco."

* * *

Also, take a look at the illustrations: the wreck of a truck that plowed into a passenger car; a sailor being invited into a truck by its driver; a driver with his arm around a pretty waitress.

To any person sensitive to the shortcomings of the industry, which most operators are striving to overcome, it all adds up to lousy publicity. In saying so, we don't mean to imply that it was intentional. The Editors of *The Post* undoubtedly saw in the article a well-written, interesting human interest story, and used it as such.

* * *

Unfortunately, while glamourizing the so-called "glamour boys" who drive diesel trucks as "cocky, independent pilots" so well paid that the one the author rode with wore "expensive pigskin gloves" for driving and sported a diamond that cost $1250, the motor truck is made to appear a highway menace.

* * *

We have no intention of taking issue with the statements made in the article. The type of driving they "glamourized" is familiar to fleet operators in all parts of the country. It's their headache.

But assuming that the statements are true, and that *The Post* has presented a factual account of how one man drives a 72,000-lb. rig up and down the mountains of the West Coast and through the "jerkwater towns," we are again provided with proof that the driver is the most important factor in motor transport public relations.

* * *

Back of the wheel, the driver is responsible for the manner in which the truck meets the general public and for the impression it creates. He can make the public tolerate trucks or damn them. (It's too much to expect that he could make the public love trucks.)

* * *

How the driver drives his truck is the responsibility of management. If management does not know how to instruct drivers in the proper handling of trucks and trailers, there are schools where it can send supervisory personnel to learn how it's done. And once the driver is out on the road on his own, it is still the responsibility of management to see that he drives safely and courteously.

* * *

There's a temptation to pawn it off on "the kind of drivers who are available today" or on "the kind of drivers the union sends us," but it just can't be pawned off that way, if we are to maintain good public relations. And we must maintain them if motor transport is to progress with the minimum amount of legislative interference.

* * *

If *The Post* article serves to bring this responsibility more forcefully to the attention of fleet owners it will have done some good.

* * *

But heaven help us if it inspires other drivers to become "glamour boys" and to ape their death-defying, life-menacing practices. For the industry it would be a short cut to more restrictions, and for drivers it would be a quick way to a cold slab in the back room of a "jerkwater town" mortician.

LETTERS from READERS

. . . on Standardized Service Instruction Cards

Will Fill a Long Felt Need

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

The proposed SAE plan to make standard size "on the job" maintenance cards will fill a long felt need in the industry. These instructions, I feel, should be kept as non-technical as possible. There is no question in my mind that on the job mechanics will appreciate and use the instructions.

I can see no reason why any fleet operator will object to a nominal charge for such a service. It is entirely to the advantage of the operator.

Judging from your article in the October COMMERCIAL CAR JOURNAL, it appears to me that the committee has thoroughly covered the subject and if carried out along these lines, should be an ideal set-up. I approve the 14x18 size.

JOS. CHURCH,
Union Co. Park Commission,
Kenilworth, N. J.

Advocated Cards for Years

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

As a member of the SAE and a shop foreman, I have been advocating Standard Service Instructions for a number of years.

I certainly think the Standard Card is far superior to anything now in use by any manufacturer.

I am confident that most mechanics would use these if they were made available to them for constant reference and after a time those who were reluctant at first would fall in line.

I think any fleet owner would be willing to pay a reasonable amount for as many sets as his fleet called for as a profitable investment.

Size 14x18 seems a good compromise; illustrations and type should be clear cut and large enough for easy reading.

I am hoping that this system will soon be adopted by all manufacturers.

A. B. OGDEN, Shop Foreman,
Portland Traction Co.
Portland. Ore.

OKs Cards But Adds a Must

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

The proposed Service Instruction Card is what has been needed for a long time. The cost involved would be of little consideration in view of the value received. The proposed size of the card is OK.

The card system of instruction is the best way of assisting the mechanic. However, there is one very important point I should like to bring out. The manufacturer MUST have cards available as soon as ANY changes have been made out and not six months or a year later.

Orchids to Mr. J. Willard Lord, and to COMMERCIAL CAR JOURNAL for a step in the right direction.

R. O. YOST, Foreman
Southern Calif. Gas Co.
Los Angeles, Calif.

A Better Way, Especially For Special Models

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

The writer feels that the Standard Service Instruction Card for on-the-job use by fleet mechanics would be a better way of publishing service instructions.

Some truck manufacturers issue a service manual covering a certain model, but due to customer's requirements, this model may be equipped with a heavier transmission, rear end or a different type of engine. Therefore, the Standard Service Instruction Cards should simplify his and the operator's problem in service instructions.

H. C. KLINGMAN, Supvr.,
Cities Service Oil Co.
Linden, N. J.

Experience Shows Cards To Be More Specific

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

My own experience is that an operation shown and covered on a single card seems to be more specific, for by trying to cover too much and too many operations in a service manual. quite often they are overlooking something, or they take too much for granted.

The proposed size (14x18) is not any too large. Service men should not require a microscope to read the cards.

J. FISCHER, Foreman
East End Dairies, Inc.
Indianapolis, Ind.

Cards More Practical

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

I think the men would use the cards more because the card could be of such material that if they put greasy hands on them the card would not be ruined as is the case with service manuals. The card would tell him what he wants to know without reading several pages.

In my opinion, I think that the operator would be willing to pay a nominal sum for a set of cards that will give the information the mechanic needs and should have. The cards should be as cheap for the truck companies as the manuals are because they will not need to include cards for several units such as carburetors, generators, starters, etc., as those cards should be prepared by the manufacturers of the units and need not be duplicated by manufacturers.

The so-called service manual is good for office boy but very few are of much service to the mechanic. You can't handle them with dirty hands and they don't give half the pictures needed.

H. S. HARTIS, Trav. Mechanic,
Standard Oil Co. of N. J.
Charlotte, N. C.

Emphasizes Speed and Ease

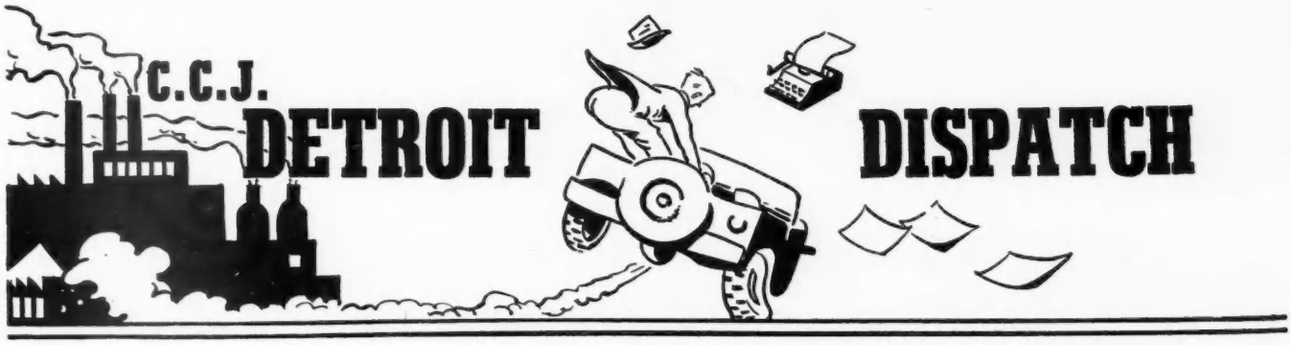
EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

Mechanics would be more likely to use the standard service instruction card system because they could find the information they want much quicker and easier.

It would be to a fleet operator's advantage to be willing to pay a reasonable price for such standardized instruction cards; especially if he has to train new mechanics. I think the size 14x18 would be very good.

A. C. LEER
Somerset, Pa.

(TURN TO PAGE 144, PLEASE)



Why Truck Output Will Lag . . . Truck Parts Picture . . . Price Rollback Rolled Back . . . March Will Be Better . . . Scramble for Parts

by LEONARD WESTRATE
CCJ Detroit News Editor

Why Truck Output Will Lag

Prospects for heavy production of trucks during the next several weeks are not good. It would be pleasant to report that all is beer and skittles in the truck industry, but the plain bald facts say it just isn't so. Despite the mass of warm air that moved in and settled in the newspaper columns following settlement of the steel strike, the men who make steel into finished products, including truck components, take a dim view of the immediate future.

Truck manufacturers here say that the wage-price policy set in the steel industry has "snafued" the production picture more than it was before. Here's why. Parts manufacturers who are steel fabricators now are faced with demands by organized labor for wage increases equal to that given by the steel makers. However, they have not as yet received any assurance that such wage boosts, if granted, would be allowed as a basis for higher prices. In short, the parts markers now are so completely befuddled on where they stand that many of them can't even say for certain that they will be able to stay in business. While the wage-price policy of the government stiffened labor's backbone in regard to wages, and practically set up by government fiat an 18-19-cent-an-hour standard increase, it did not at the same time give employers any definite assurance that they will be able to get price relief if they meet labor's demands. That, in a nutshell, is the principal reason why truck production is going to lag for weeks and perhaps months.

Truck Parts Picture

So far as replacement parts are concerned, the situation up to now has not been too bad, truck manufacturers here report, but for some companies it will get worse. Ford had some trouble when major suppliers were closed by strikes, but since the big suppliers have made their peace with labor, the outlook for Ford replacement parts is good.

Operators of General Motors trucks, however, already have reported trouble, and it now appears that even though the strike is settled, the parts shortage will prevail for quite a while until inventories can be built up. Most G.M. warehouses were not struck and deliveries continued throughout the strike until stocks ran out. There was no appreciable inventory of replacement parts before the strike was called, so it will be pretty much a matter of starting from scratch.

Dodge reports that it has not had too much trouble with replacement parts, although there have been a few spotty instances. In general, the replacement parts picture for trucks has been and probably will be considerably better than it has been for passenger cars, since some civilian trucks were made all during the war and supplier sources have been established.

Price Rollback Rolled Back

The truck price rollback, which was scheduled to appear some time this month, still appears to be some distance off. The thinking here is that with wage boosts coming all down the line, OPA may wait until the situation shakes down before attempting to set ceilings. In fact, there is a growing opinion that ceilings may not be too important a factor anyway, since in one instance the pressure of competition has caused a company to break away from its ceiling price. Henry Ford II, president of Ford Motor Co., revealed recently in a letter to OPA that his company is selling one truck model more than $100 below the ceiling. The closed cab pickup actually is selling at $946.82 delivered, or $105 less than the legal maximum price. One reason why this is so is that Ford has to meet the competitive price of the Dodge pickup. Another is that truck prices on pickup models were set to allow for greatly increased costs and limited volume.

March Will Be Better

Although truck production during January totaled approximately 54,000, figures for February will show a sharp decline. Ford lines were down during the entire month, Dodge was closed during the last week of the month and, of course, Chevrolet made none at all. March will be better, with Ford starting on the 11th and Dodge also resuming early in the month. At this writing the G. M. strike is not settled, but shows signs of winding up any day, so it is a

(TURN TO PAGE 166, PLEASE)

Painting Pointers from a

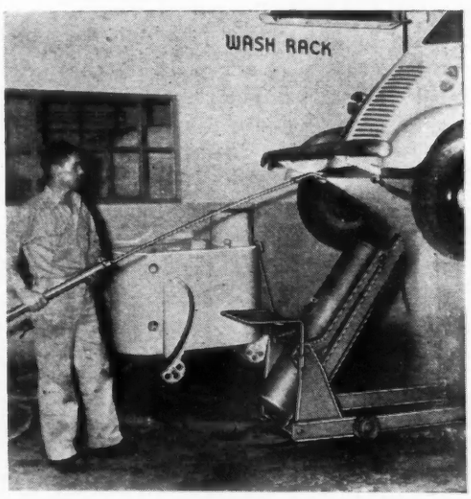
E. W. Bryan, Miami Laundry's shop foreman (left) uses a vibratory sander to smooth the under coat, while Parvin Winchell, maintenance superintendent, tests the surface

DURING the past few years, many fleet managers have been forced to cut to an absolute minimum the exterior maintenance of their rolling stock. The reasons for this situation are understandable enough. Labor and, in some instances, needed materials have been in short supply.

Now, that conditions have eased somewhat, all fleet units should have a thorough outside renovation. If trucks, tractor equipment and company passenger cars are to continue usable, until replacements can be obtained, all exposed surfaces must be paint-protected against climatic deterioriation; especially is this true in the presence of salt-impregnated air.

Not only is surface protection necessary from a conservation standpoint, but the appearance of fleet units is highly important, too. Customers, present and prospective, are very likely to judge the business methods of a fleet owner by the

The engine and chassis are thoroughly steam cleaned in the second operation before the job of painting is begun



COST: $35 PER TRUCK, PER YEAR

"Winchell keeps an accurate record of all labor, materials and outside charges on each vehicle. From these figures, he finds that while the charges for individual paint jobs vary somewhat, the average cost covering all items, except lettering, runs around $50. The lettering item ranges from $15 to $20.

"Winchell knows of no local paint shop which would give him a complete refinish job, with comparable workmanship and material, for what it now stands him.

"'One of our home-made paint jobs,' says Winchell, 'stands up for a minimum of two years. Therefore, as we figure it, the annual cost of exterior protection for each of our vehicles runs around $35—minus not inconsiderable publicity value.'"

Neat Fleet

The key secret in getting satisfactory results, especially when using white for final coat, is a thorough preparation of the surface. Step-by-step procedure is outlined

by HARRIE H. BIERMAN

looks of his vehicles. In the case of trucks which deliver to the ultimate consumer at his place of residence, such judgment is particularly critical; especially in regard to units operated by department stores, florists, dairies, laundries, retail bakeries and food stores.

No fleet manager realizes the importance of exterior upkeep to a greater degree than does Parvin Winchell, maintenance superintendent for the Miami Laundry Co., Miami, Fla. Consequently, the trucks and company cars under his supervision comprise one of the best-looking fleets in the entire South.

Before the war the laundry operated 63 trucks and nine passenger cars. Its fleet now consists of 49 trucks and 12 passenger cars. The latter are used by firm executives and route supervisors. Practically, all trucks—½-ton and ¾-ton—serving the retail trade are c.o.e. jobs. And, except for diaper service units, all delivery trucks are painted a glistening white, with a wavy two-tone body stripe and black wheels. Fenders, also, on trucks having them, are black. The color scheme of the diaper service jobs combines pastel shades of blue and pink. To any mother these colors in themselves have a "baby" connotation.

"What the laundry actually is selling," Winchell points out, "is cleanliness. Therefore, our trucks should emphasize that idea by their appearance.

"Possibly, many of our long-term customers familiar with our work

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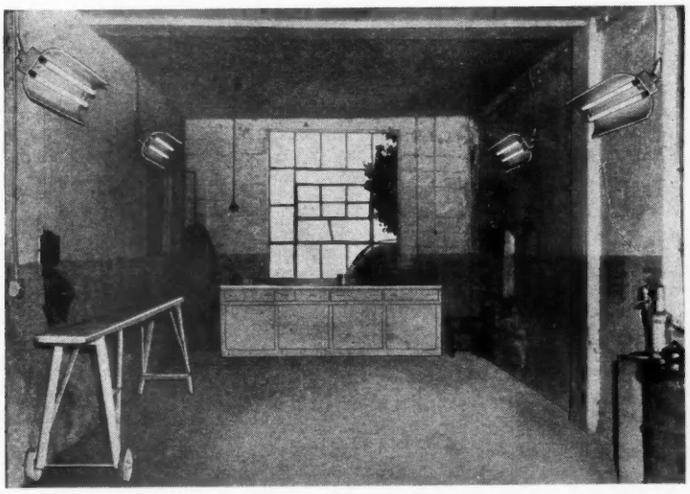
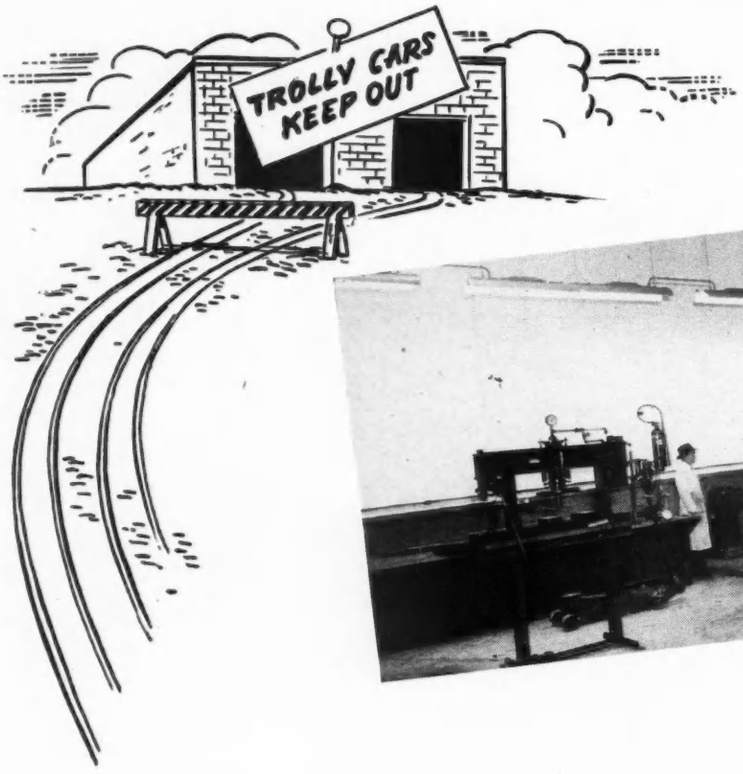
This paint shop, 18 x 22 ft., provides all needs for operating efficiency. Ample lighting—natural, as well as artificial—improves workmanship. Exhaust fan on wall at right decreases fire hazard



A well-groomed truck such as the one above is a business asset to any fleet owner. Below. Color scheme and lettering on garage ties up with that on units



Photos above and at right show section of engine rebuilding shop and "in-line" work benches of general work area. Plan drawing shows present lay-out in foreground, future expansion in shaded area

Remodelled "Barn" Makes Modern Fleet Shop

A little wall and ceiling patching, new heating and lighting equipment, power-operated entrance doors and liberal use of paint give fleet up-to-date facilities

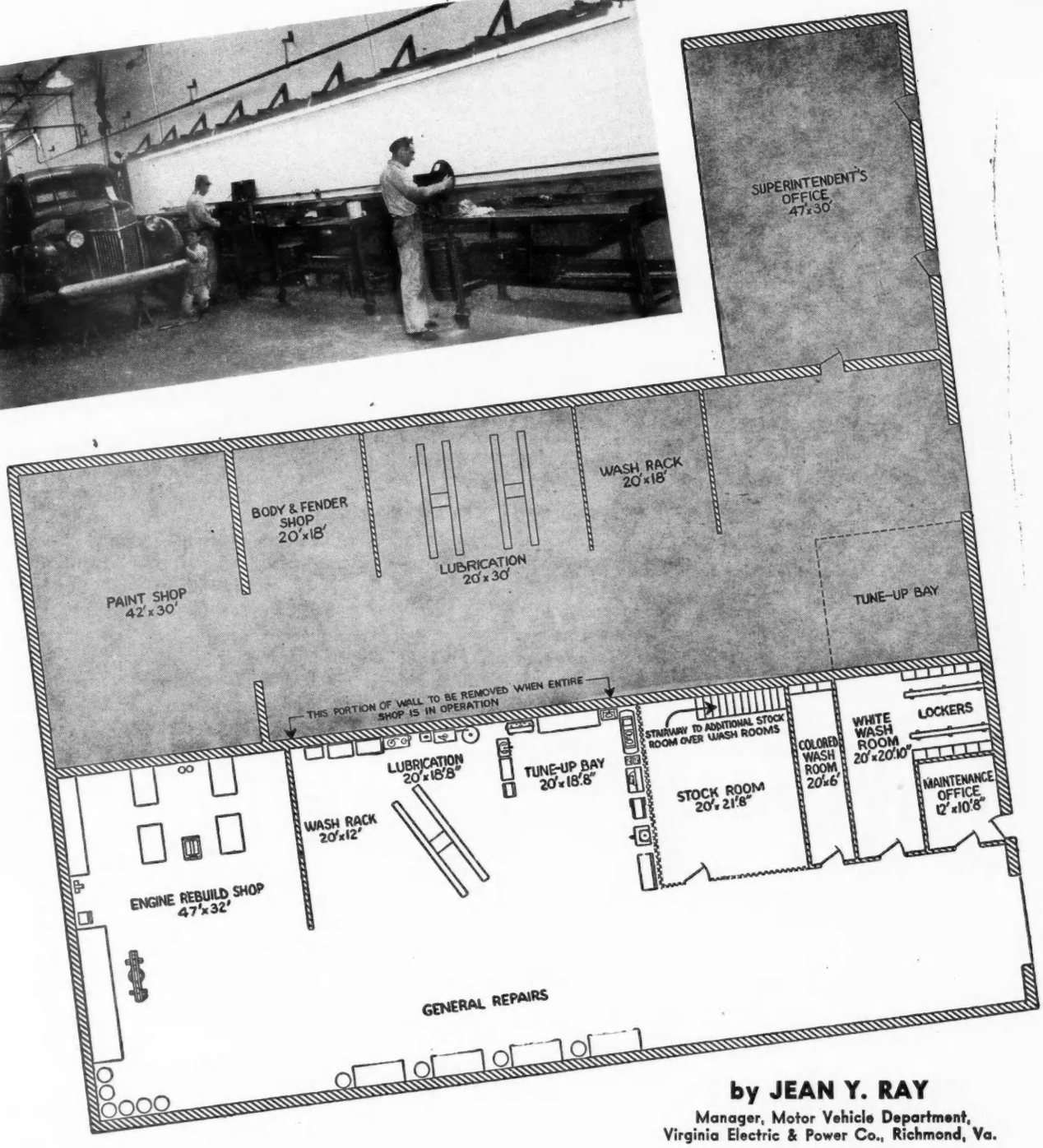
AT A TIME when many fleets were in the dreaming, planning or building stage for new fleet maintenance shops, our company was fortunate to get one by converting one bay of an old trolley barn into what we believe is a thoroughly modern first unit of what will be our Richmond headquarters garage. At the moment it is only half its contemplated size, but even in this diminutive form it serves its purpose well in handling the overall maintenance of 107 of our locally-based motor vehicles. In addition it handles the major unit overhauls for all of our 650 vehicles scattered in nearly 50 communities in three states and serviced by 13 smaller subsidiary shops.

We hope that our shop may serve as an inspiration to other fleetmen

EASY ON THE EYES

" . . . our shop equipment, from the smallest engine analyzer to the largest crane, is painted in characteristic Army olive drab. It just didn't happen that way, even though we did buy one piece of equipment from Army surplus. The answer is that we had an industrial specialist go over the plans from an eye-strain viewpoint and we found that red, white and aluminum colors for equipment at eye level were strictly taboo.

"Above eye-level, however, it's a different story. Here we found that pure white was tops for increasing lighting efficiency."



by JEAN Y. RAY
Manager, Motor Vehicle Department,
Virginia Electric & Power Co., Richmond, Va.

dissatisfied with their present shops, for all that was necessary for the reconversion was a little wall and ceiling patching, new heating and lighting equipment, a new power-operated entrance door and liberal use of the paint brush.

The basic layout of the shop is shown in the accompanying plan and interior photographs. We moved into the first bay (47x137 ft.) last September and hope to get into the second one (42x130 ft.), by the middle of next year. When we get the addition ready, present tune-up, lubrication and washing equipment will be moved to the new and larger areas indicated. The second lift will just about double capacity of the lubrication area and the larger washrack will accommodate our heaviest models, now relegated for washing to a corner of the storage garage. The new tune-up bay will provide space for two vehicles instead of one.

Part of the wall between the two sections of the shop will be removed to provide ready access between all departments, and the space currently occupied by tune-up, greasing and washing will be absorbed in the general repair shop.

(TURN TO NEXT PAGE, PLEASE)

Remodeled "Barn" . . .

(Continued from Page 43)

O.D. and White Color Scheme

ONCE in a while, we get an ex-serviceman visitor who stops short as he enters the shop, thinking he has mistaken the place for an Army outfit. This is because all our shop equipment, from the smallest engine analyzer to the largest crane is painted in characteristic Army olive drab. It just didn't happen that way, even though we did buy one piece of equipment from Army surplus. The answer is that we had an industrial specialist go over the plans from an eye-strain viewpoint and we found that red, white and aluminum colors for equipment at eye level were strictly taboo, despite the prevalence of these colors.

Above eye-level, however, it's a different story. Here we found that pure white was tops for increasing lighting efficiency. So, as a supplement to our fluorescent and regular lighting fixtures, we painted ceilings and side walls, down to the 5-ft. level, in white. The rest of the walls are battleship gray. Those light fixtures, incidentally, are really nice, the fluorescent jobs being mounted about 6 ft. above all workshop areas (benches, test stands, overhaul stands, etc.). Ordinary 500-watt bulbs furnish the general light for the rest of the shop.

Cleanliness Is a Hobby

PERHAPS we are just plain lucky, but cleanliness is a hobby with all our shop men. They all take pride in and cooperate in keeping the shop a lot better than average clean. There is no regularly assigned man for this duty and all take their turns in keeping their own particular areas in top shape.

One of the things that helps out in this respect is that each man is assigned to an individual workbench. There are four mechanics in the general shop area with four benches mounted in line along the left wall. There are four more in the rebuild shop and each has at least one portable workbench there. The tune-up man has his own bench in the tune-up bay and, of course, the parts man, greaser and washer have their own areas.

Shop Equipment is Complete

IN THE equipment line, we have provided just about everything needed for efficient work. In the unit rebuild shop, for instance, there are two portable steel A-frame hoists of sufficient capacity to lift our largest engine, and a similar hoist with lowered lift arm which fits inside the cabs for hoisting transmissions up and out. We have an overhead crane too, but find the portable jobs much more convenient for our particular type of shop.

Then there is a standard hydraulic transmission jack, a number of steel portable workbenches, four adjustable engine dolleys for use while working on the block and a smaller one for transmissions and rear-ends, a valve refacer, a valve seat grinder, a valve spring tester, a bench grinder, two drill presses, an arbor press, an adjustable reamer, and a medium-sized, all-purpose lathe which we have found, in common with nearly all fleets, is a life saver when parts are hard to get.

In the tune-up bay, where all 5000-mile inspections are conducted, we have a large engine tester which we purchased from army surplus and which has just about anything a man could ask for in the way of electrical and compression testers. In addition we have a portable compression tester, a vacuum gage, an exhaust gas analyzer, a distributor tester, a spark plug cleaner, a toe-in gage (we farm out the major front-end work) a wheel balancer (which we use every 5000 miles) and a steel workbench.

The lubrication and washing equipment follow standard lines with a

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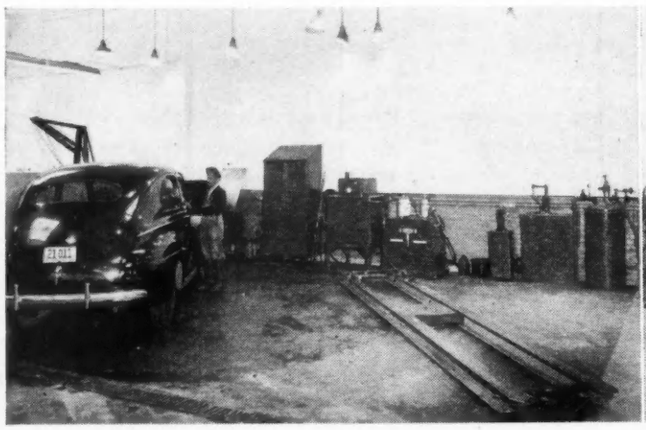
Below. Washing, lubrication and tune-up are handled in these areas. The well-stocked parts room is beyond tire rack, right



LAUGH IT OFF

with SKAG SHANNON

Our Warehouse Foreman was talking to his little daughter about a birthday present. "I want a baby brother," demanded the tot.

"But daughter," protested the father, "there won't be time for anything like that. You'll be 10 in two more weeks."

"That's all right, Daddy, you can put some of your freight handlers on the job."

C C J

Fleet Owner to newly married nephew coming into the business. "You boys of today want too much. Do you know what I was getting when I married your aunt?"

N. M. Nephew: "No, and I bet she didn't either!"

C C J

New Inter-City Driver: "How far is it to the next town?"

Hayseed: "Nigh on to five miles as the crow flies."

N. I.-C. Driver: "Well, how far is it if a damn crow has to walk and carry an empty gasoline can?"

C C J

WILMA, THE WAITRESS AT "COFFEE DANS" SAYS SHE COULD GO A LITTLE STRONGER FOR LINE-HAUL TRUCK DRIVERS IF THEY HAD MORE HORSEPOWER AND NOT SO MUCH EXHAUST.

C C J

Friend: "Don't tell me your husband is divorcing you for only a slight misunderstanding!"

Safety Agent's Wife: "Yes, I understood him to say that he would be out of town for a week."

C C J

SAM, THE SHOP FOREMAN, SAYS THAT RUNNING AFTER WOMEN NEVER HURT ANYBODY—IT'S CATCHING THEM THAT DOES THE DAMAGE.

A NAVY RECRUIT WHO WAS LEARNING TO SWIM WAS MAKING EXTRAORDINARY PROGRESS WITH THE BREAST STROKE WHEN A COLD WAVE HIT HIM IN THE FACE.

C C J

Bert, our bachelor Bookkeeper, who also keeps an apartment, says that he dares not drop his shoes on the floor twice for fear the landlady will not understand.

C C J

Clerk from cashier's office calling to collect freight charges on a previously delivered furniture shipment. "Is your husband home?"

Wife: "Why?"

Clerk: "I've come to collect on the sofa."

Wife: "Shh—not so loud; he'll be here in a few minutes."

"This one thinks he's a Piggy Bank. He says 'Koin-Koin, instead of 'Oink-Oink'!"

As the inquisitive man sat in the park, he watched a tramp coming along, picking up cigarette butts. Then the tramp sat down on the seat and began sorting his spoils. Presently he threw a long one away. This was too much for the curious onlooker.

"Excuse me," he said. "That looked like a good one. Why did you throw it away?"

The tramp drew himself up proudly and replied: "It ain't my brand."

C C J

The cute little thing entered the doctor's office with a worried look.

"Doctor," she said, "I need an operation."

"Major?" asked the doctor.

"No," she said, "Corporal."

C C J

First Gal: "I had a date with a soldier who has been overseas for months and this is his first liberty."

Second Gal: "You mean furlough. Liberty is what a sailor takes. Soldiers never take liberties."

First Gal: "Are you kidding?"

C C J

HE: "PLEASE!"

SHE: "NO!"

HE: "JUST THIS ONCE!"

SHE: "NO, I SAID."

HE: "AW, MA, ALL THE REST OF THE KIDS ARE GOING BAREFOOTED."

C C J

She: "Isn't a fireplace romantic? See the pretty figures the flames make. What do you suppose they're saying?"

He: "Sixteen dollars a ton!"

(Is she his wife or his fiancee?)

C C J

Her eyes were black as jet,
This charming girl I knew;
I kissed her, then her husband came.
Now mine are jet black, too.

RESUME WORK

SHOP and SALVAGE HINTS

1. Hot Water Heater Tip

by Paul Shepherd
F. C. Meyer Co., Lawrence, Mass.

Our Dodge trucks would never circulate enough water through the hot water heater to throw off sufficient heat. As a final resort I tried placing an obstruction in the water pump by-pass, on the theory that circulation pressure was escaping the cylinder head through the by-pass.

I did this by placing a bolt with a hex head (5/8 in. x 2 in.) in the hole of the thermostat casting so that the bolt head would rest in the rubber hose elbow. The hex head provides sufficient clearance to offset any vacuum and permits proper circulation of the coolant.

This device permits more pressure to be built up in the block and more volume of water to be passed through the heater. All our trucks responded very well to this modification.

2. Oil Line Cleaning Tip

by H. D. Puryear
Grocers Baking Co., Owensboro, Ky.

Here is a sure way of cleaning that stopped up oil or gas line. I solder a grease fitting to a nipple of proper size to fit the line connection, as shown in the drawing.

When a line is stopped up, I disconnect it at both ends and screw this gadget to the upper end. I then attach a grease gun to the fitting and pull the trigger. After grease flows through the line freely, I blow the line out with compressed air.

I have found this will free any line. After the device is made, it takes little time to do the job.

3. Cylinder Head Tool

by Roy Conrath
Conrath's Auto Repair Shop
Indiana, Pa.

Here is a little tool made from an old spark plug. I find it very convenient when removing and installing cylinder heads. I have a number of different sizes around so that I have a repair tool for each size head.

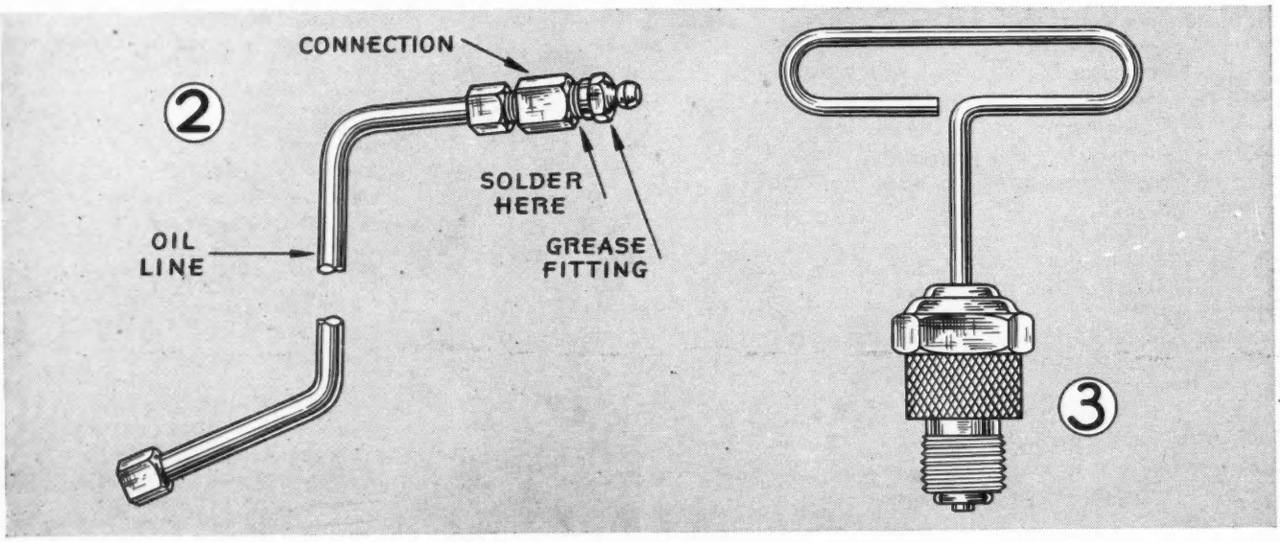
Just take a piece of round stock iron that will fit in the hole in the spark plug. Bend one end of the rod into a handle. Break the porcelain core out, run the rod through the spark plug, put a washer on the end of the rod and rivet it. The rod should turn in the plug.

A tool of this sort will save many mashed fingers and also speed the positioning of the head gasket.

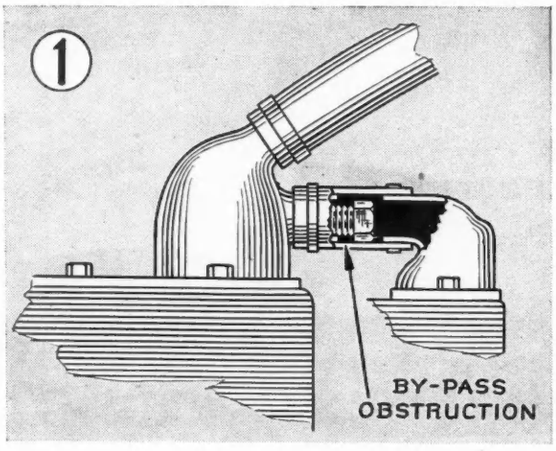
4. Fan Pulley Lock

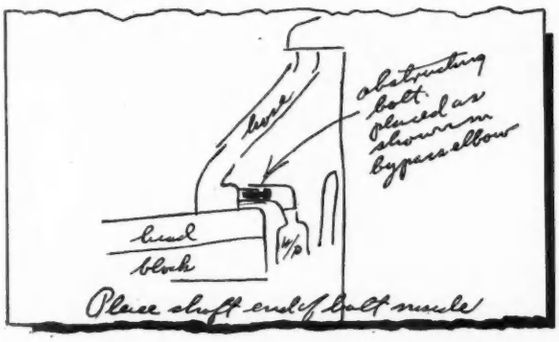
by Jerry Bjelland
Garage Foreman
Portland, Ore.

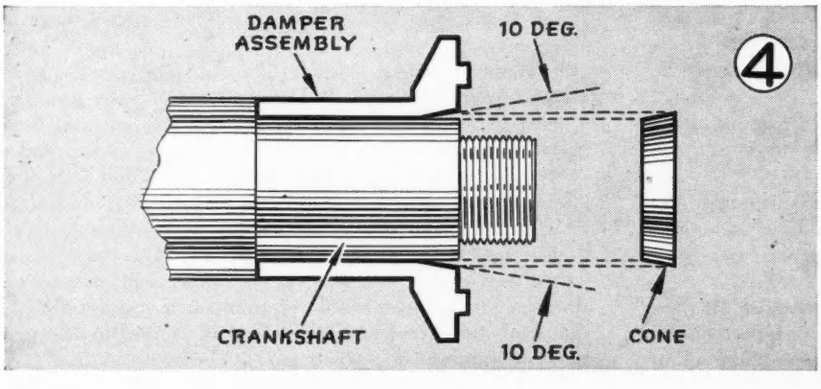
We keep the lower fan pulley and vibration damper tight on the crankshafts of our trucks with a special locking device we have made. We counterbore the hub as indicated in



Commercial Car Journal will pay $5 for acceptable shop hints and $5 for parts salvage tips. A snapshot or a rough drawing with a simple explanation is all that is needed. CCJ will polish them for publication. Send one in today! Shown below is a typical contribution—just a rough sketch and a brief statement of the problem and its solution. See how it looks in Fig. 1. This brought Mr. Shepherd $5. There are other $5 bills waiting for your contributions. Don't underestimate your ideas. Let the editor judge.







the drawing and machine a tapered cone to fit into this recess.

In installation, the hub is placed on the crankshaft and the lock nut turned down in the usual way. This positions it with respect to the shoulders of the shaft. We then remove the nut and washer, install the tapered cone and tighten the nut. By having approximately 1/16-in. bite on the cone before it is flush with the flat on the hub, danger of splitting the hub will be averted.

5. Grooving Army Tires

by F. E. Seftchick
Swift & Co., Brooklyn, N. Y.

Recently released military type truck tires have a tendency to skid on wet paved streets. To overcome this we cut grooves in the tire with an electric tire regroover.

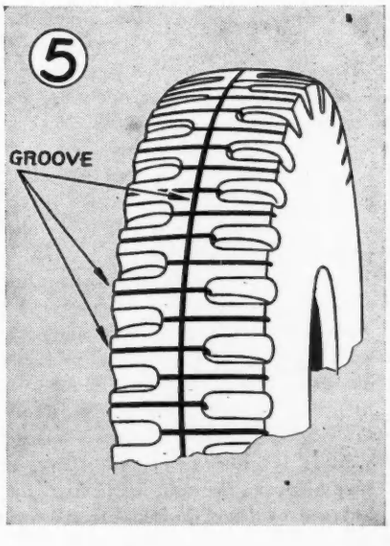
6. Locking Stud Tip

by H. E. Elliott
International Cementers, Inc.
Bakersfield, Cal.

On some types of rear ends, such as the White WA2264, the carrier assembly is bolted to the housing with 7/16-in. U.S.S. cap screws, which were constantly working loose.

To overcome this difficulty I removed the carrier assembly from the housing and counterbored six of the bolt holes to take tapered dowels, the same type that are used in the drive axles. I then replaced the capscrews with studs.

The trucks were repaired in this manner over two years ago and have given no further trouble. This procedure will also keep transmission bearing cages from working loose.



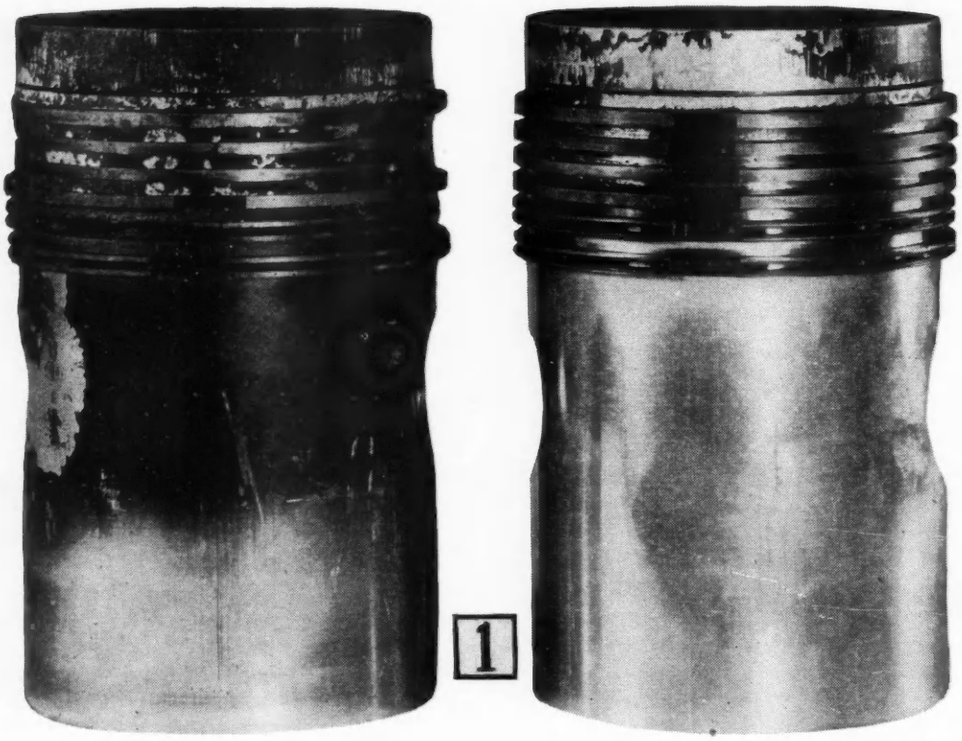


Fig. 1. Pistons from a 480-hr. test. Dirty piston operated with SAE 30 regular oil; clean piston is from an engine using an SAE 30 heavy-duty oil

ADDITIVE OILS Not a

Fuels, engines and operating conditions cause deposits which oils alone cannot whip . . .

Conclusions Based on Lab and Road Tests

1. Engine sludge deposits constitute a serious problem in a considerable portion of the vehicles in service.

2. Oil alone, whether Regular, Premium, or Heavy Duty, cannot overcome all kinds of engine sludge and varnish deposits.

3. Additive-treated Premium and Heavy Duty oils have largely solved sludge and varnish problems in sustained severe duty, high temperature service. Unfortunately, only a very small percentage of the engines on the road operate under such conditions.

4. Additive-treated Premium and Heavy Duty oils have also solved the bearing corrosion problem with hard alloy type bearings.

5. Fuels and engine design factors of over-cooling and under-ventilation are the prime cause of sludge formation in moderate and light-duty service. The great majority of the engines on the road operate under such conditions.

6. It is noteworthy that Heavy-Duty detergent oils are very effective in minimizing high temperature type deposits but are of very limited effectiveness in minimizing moderate or low temperature deposits. "Detergency" is thus not a cure-all.

7. Motor oils are being blamed for sludge conditions which they cannot overcome or correct without additional help. With better fuels, higher engine temperatures and adequate ventilation, improved oils of the Premium and Heavy Duty type can really do the job for which they are designed.

8. If the petroleum and automotive industries are to aid their customers to overcome sludge and varnish problems, a joint effort is necessary to produce better oils, better fuels and better engine temperature control and ventilation.

9. It would seem the oil technicans and automotive engineers have been spending too much time in running laboratory engine tests under high speed, high load and high temperature conditions, which simulate only a small percentage of the engines on the road, and not enough time on engine tests which simulate intermittent light or moderate-duty service, which after all make up the great bulk of automotive operations.

TABLE A—LABORATORY ENGINE TEST PROCEDURES

6 Cylinder Gasoline Engine

Test Procedure	C. R. C. Designation L-4	C. R. C. Designation FL-2	Special Low Temperature Test
ntended to simulate service conditions of:	Continuous, heavy duty high temperature service	Continuous, moderate duty with low engine temperatures	Fluctuating, light to moderate duty with low engine temperatures
Crankcase Oil Temp.....	280 deg. Fahr.	155 deg. Fahr.	120 deg. Fahr.
Coolant Temp.	200 deg. Fahr.	95 deg. Fahr.	90 deg. Fahr.
Speed RPM.....	3150	2500	1800
Load.....	30 h. p.	45 h. p.	Approx. 25 h. p.
Test Time.....	36 Hours	40 Hours	40 to 96 Hours
Air-Fuel Ratio.....	14.5 to 1	14.5 to 1	Fluctuating cycle rich to lean. (Approx. 10:1 to 14:1)
Piston Rings.....	New rings installed for each test.	New rings installed for each test.	Worn rings used in each test.
Crankcase Ventilation.....	Not controlled. Approx. 1 to 3 cu. ft. per min.	1 cu. ft. per min.	Varied to study effect of ventilation.

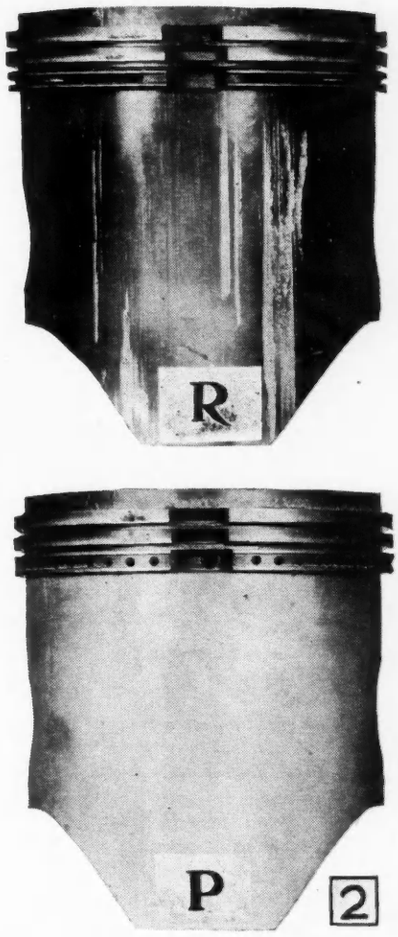


Fig. 2. Pistons from a 36-hr. test run at high speed and at high temperature. Heavily varnished piston operated with regular oil; clean piston operated on heavy-duty oil

Sludging Cure-All

Special lubricants are boon in sustained, severe duty

Editor's Note—How this article came into being deserves a word of explanation. At the recent SAE Annual Meeting in Detroit a paper was presented defining Regular, Premium and Heavy-Duty oils. Discussers agreed and disagreed with the definitions. (C.C.J. February, page 78.) One of the discussers was the author of this article. He considered the definitions adequate but thought it desirable to supplement the original paper by pointing out that oils alone are not the complete answer to satisfactory engine performance. He said three other factors are of equally vital importance, namely, the fuels, the engines and the operating conditions. His remarks were so well received that Commercial Car Journal prevailed upon him to elaborate his notes into an article. Herewith is the result, and fleet operators will find it packed with examples and findings in language that they understand.

by CARL W. GEORGI

Technical Director, Research Laboratories, Quaker State Oil Refining Corp.

FIGS. 1 and 2 are typical of many we have all seen in technical articles on oils and particularly in oil advertisements during the past few years. Fig. 1 shows pistons from laboratory engine tests run for 480 hours in a single cylinder diesel test engine, following standardized test procedure known as C.R.C. Designation L-1. The dirty piston is from a test run with an SAE 30 Regular oil and the clean piston from a test with an SAE 30 Heavy Duty oil. The difference is obvious.

Fig. 2 shows pistons from laboratory engine tests in a 6-cylinder gasoline engine, run for 36 hours at high speed and high temperatures, following the standardized test procedure known as C.R.C. Designation L-4 (See Table A). The heavily varnished Piston R is from a test with an SAE 30 Regular oil and the clean Piston P from a test with SAE 30 Heavy Duty oil. Again the difference is obvious.

These laboratory engine tests, which have become standardized industry procedures for evaluating the stability, oxidation resistance, bearing corrosion resistance, and detergency-disperancy properties of oils, are all run at continuous high speeds, high temperatures and high loads and with little or no stopping, starting or idling. All of these laboratory engine tests invariably show Heavy Duty, detergent oils to be vastly superior to Regular oils in preventing sludge and varnish formation. Now, if these laboratory en-

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Additive Oil . . .

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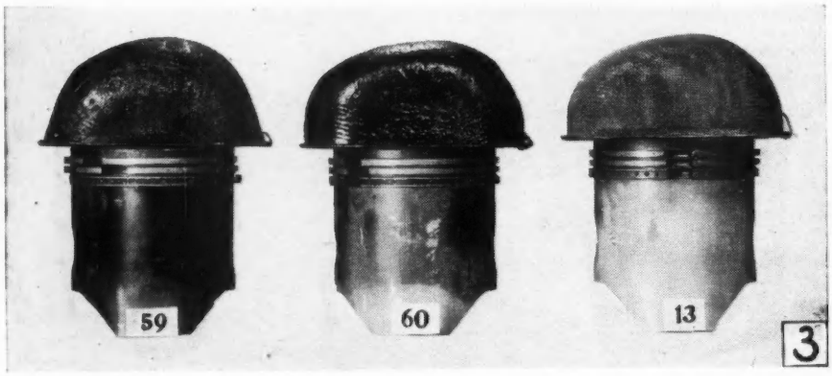

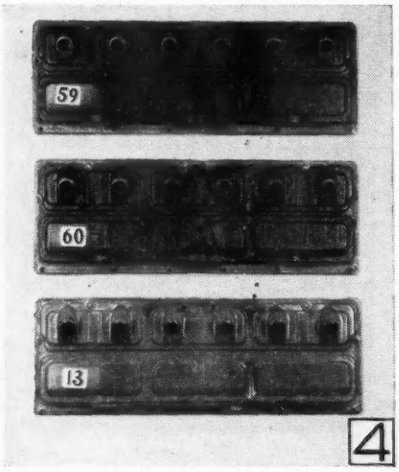

Fig. 3, left. Pistons and oil pump screens from engines on the road, using heavy-duty oils. Fig. 4 above. Pushrod compartment cover plates from same engines

gine tests are accepted as final and conclusive evidence, only one conclusion seems possible:

Heavy Duty, detergent oils are the complete and happy answer to all engine sludge and deposit trouble.

Road Test Results

HOWEVER, in spite of the fact that Heavy Duty, detergent oils are in very extensive use, particularly in truck, bus and diesel engines, sludge deposits are still a major and serious problem in service.

Fig. 3 shows pistons and oil pump screens taken from engines on the road. No. 59 is from a light city delivery truck after 35,000 miles of operation with a Heavy Duty, detergent oil. No. 60 is from a bakery truck after 30,000 miles of operation with a Heavy Duty oil. As shown, the pistons are badly varnished, the oil rings are almost completely plugged, and the oil pump screens are heavily sludged.

For contrast, No. 13 parts are from an inter-city, tractor-trailer engine after 38,000 miles with a Heavy Duty detergent oil. In this operation, the Heavy Duty oil does an excellent job and the piston and oil screen illustrate the exceptional freedom from deposits.

Fig. 4 shows the push-rod compartment cover plates from these same engines. Plates 59 and 60 are coated with heavy sludge deposits and typify the dirty condition of these two engines. On the other hand, cover plate 13 is very clean, having only a light film of gray lead salts.

It is thus obvious that very dirty engines can develop, even with Heavy Duty detergent oils, if the engine operating conditions are adverse. It is equally obvious that Heavy Duty oils will do an excellent job of keeping engines clean if the operating conditions are favorable.

(Author's Note—Many of the photographs used to illustrate this discussion show parts from one make of engine. This might create the impression that sludge deposits are a particular problem in this make of engine compared to other makes. This would be incorrect. The photos were selected to compare more directly with numerous laboratory tests which were run in this make of engine. Based on service experience, all makes and types of engines now in use are subject to sludge deposit troubles where operating conditions are adverse, and oil alone is not the cure.)

Fig. 5 shows engine cover plates from a series of 15,000 mile road tests run under light to moderate service conditions. No. 73 is from a 15,000 mile test with a Regular oil, and No. 46 and No. 64 from similar tests with two different Heavy Duty detergent oils. In the course of this road test work it was thought some types of Heavy Duty detergent oils might be less effective than others, so several entirely different types were road tested, with the finding that performance was very much the same.

The engines with the Regular oil and with the Heavy Duty detergent oils in these road tests showed little or no difference as to engine cleanliness, as illustrated by the photo, and the degree of sludge deposits may well be considered as unsatisfactory in view of the short mileage.

Now, if evidence of this type from engines on the road is accepted as final and conclusive, then two conclusions might be made:

1. Heavy Duty detergent oils are a failure.
2. Laboratory engine tests, which are now used to develop and evaluate oils, do not correlate with road performance.

The writer is convinced that these two conclusions are just as wrong as the opposite conclusion mentioned previously and to the effect that Heavy Duty detergent oils are the complete and happy answer to all engine sludge problems. We must dig deeper for the real answer.

Sludge & Varnish Causes

THERE are three different types of varnish deposits—which also applies to sludge deposits:

1. High Temperature: Principal cause is oil of inadequate stability.
2. Intermediate Temperature: Principal cause is apparently the fuel.
3. Low Temperature: Principal cause is oil contamination with water, soot, lead salts, and fuel.

It should be noted further that "temperature" does not refer to the weather but to engine temperatures as influenced by the operating conditions and design.

High Temperature Deposits

A VAST amount of experience has indicated that additive treated oils of the Premium and Heavy Duty types have solved the varnish and sludge problem in severe duty, high temperature service. These types of oils, having proved stability and oxidation resistance, do not deteriorate at high engine temperature to form the oil oxidation type of sludge and varnish which was encountered in past years with some Regular oils.

It can also be stated that additive-treated Premium and Heavy Duty oils have solved the bearing corrosion problem, which was at one time so much a factor with the newly introduced hard alloy type engine bearings.

However, only a small percentage of the engines on the road operate under continuous severe, heavy-duty conditions where high temperature sludge and varnish is a factor, and the real problem is the engine operating in intermittent service, designated as moderate or light duty, which

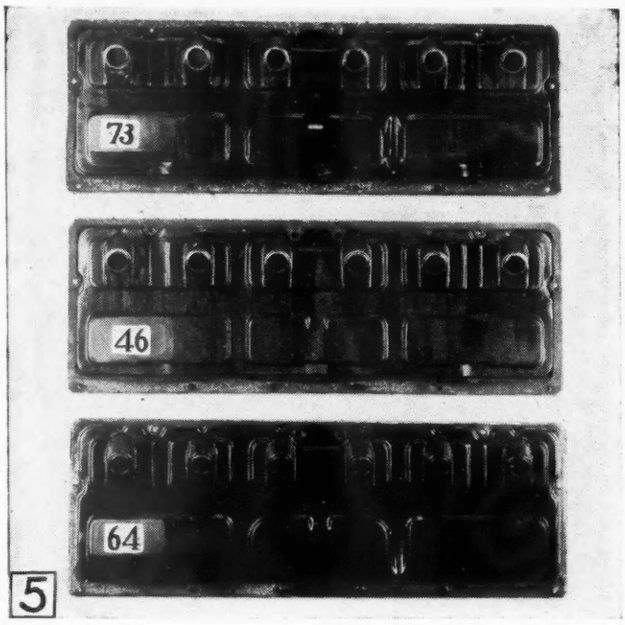

Fig. 5. Left. Cover plates from series of 15,000-mile road tests run under light to moderate operating conditions. No. 73 test was made with regular oil. Nos. 46 and 64 were made with detergent oils. Cleanliness remained same

Fig. 6. Below. Two pistons from two test engines using heavy-duty detergent oil, with different gasoline. Differences in cleanliness show that some property in gasolines can be responsible for engine deposits regardless of type of oil

typifies the great majority of engines in use. It may also be stated that the chief reason the standardized laboratory engine tests do not correlate with so many experiences in service is that the laboratory tests are conducted under conditions of continuous high temperature, severe operation which portray only a very small phase of actual road performance.

Intermediate Duty Deposits

FIG. 6 shows pistons from two Procedure FL-2 laboratory engine tests. The FL-2 engine test is similar to the L-4 high temperature engine except the jacket and crankcase oil temperatures are much lower, to simulate conditions of moderate duty operation on the road (see Table A).

The two pistons in Fig. 6 are from two identical tests with a Heavy Duty detergent oil, the only difference being in the gasoline used. Since one piston is very dirty and the other very clean, it is obvious some property in gasolines, as yet unrecognized fully, can be responsible for engine deposits, regardless of what type of oil is used.

Low Temperature Deposits

HOWEVER, neither oil nor fuel can be blamed for all engine deposits. Figs. 7 and 8 show engine parts from two laboratory tests. The "LT-6" parts are from a moderate duty FL-2 Test using a "good" oil and a "good" gasoline and the engine accordingly remained satisfactorily clean with only slight sludge or varnish deposits. The "SLT" parts are from a special low temperature engine test with the same "good" oil and "good" gasoline. As itemized in Table A, the low temperature engine test, utilizes worn rings and air-fuel ratio cycling from rich to lean. As shown, the "SLT" engine parts are very dirty and closely approach sludge conditions frequently found in engines in light-duty service on the road.

Poor combustion, resulting from rich mixtures, plus heavy blow-by from low engine temperatures and worn rings produces severe oil contamination and subsequent sludge deposits, in spite of "good" oils and "good" fuels. Such conditions of engine operations are unfortunately much more typical of engines on the road than the new rings and carefully controlled lean mixtures utilized in the C.R.C. laboratory engine tests.

Fig. 7. Engine parts from a moderate duty FL-2 test using a good grade of oil and gasoline remained clean, with slight sludge and varnish deposits

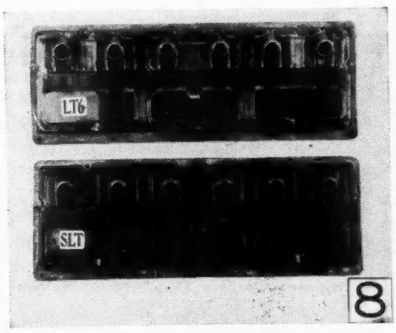

Fig. 8. SLT test parts from a special low temperature engine test, using the same good oil and gasoline, are dirty. This approaches sludge conditions in engines in light-duty service

It is noteworthy that detergent additives, as used in present day Heavy Duty oils, seem to be of little use in overcoming deposits deriving from some fuels and from excessive blow-by contaminations, although these detergents are very effective in overcoming deposits from oil oxidation and heavy-duty, high-temperature service. In other words "detergency" is not a cure-all.

Design & Sludge Deposits

PRESENT-DAY engines and cooling systems are apparently designed so that the oil will not get smoking hot and the coolant boil over in operation at maximum speed and load in the hottest summer temperature of the desert. As a result many engines are overcooled in moderate or light-duty service. This matter of engine temperatures is of vital importance in controlling blow-by of combustion products and subsequent oil contamination and sludge deposits.

It is quite generally considered that coolant and oil temperatures of 140 deg. F. minimum are necessary, and with temperatures lower than this, excessive blow-by, oil contamination and sludge may readily develop. If cylinder walls remain at low temperatures because of excessive cooling system capacity, they act as condensers for the combustion gases, causing liquid water, unburned fuel, soot and lead salts to wash down past the piston rings into the crankcase. It is noteworthy that heat distribution in many engine blocks is poor, so that cylinder wall temperatures may be undesirably low even though the dashboard temperature gage, which reads cylinder-head temperature, registers fairly high. Similarly, if the crankcase oil remains at temperatures much below about 140 deg. F., due to over-cooling, moisture

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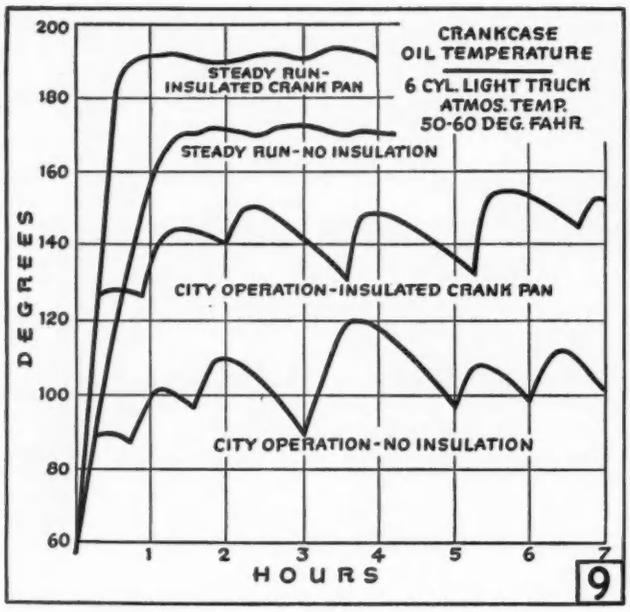


Fig. 9. Crankcase oil temperature recordings of a typical light truck engine. In normal city service oil temperature rose gradually on running and fell on standing idle. With crankcase insulation, average oil temperature was increased

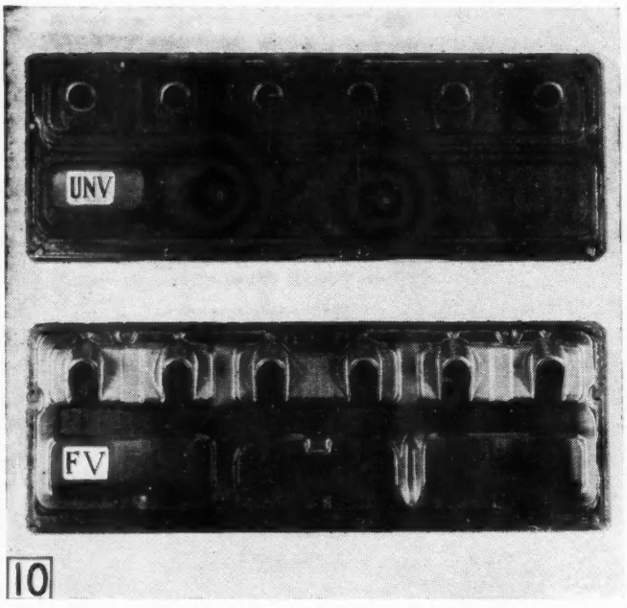


Fig. 10. Cover plates from two test runs, illustrating ventilation factor. Plate UNV is from test with little ventilation. Note sludge formations. FV test was made with forced ventilation of 10 cu. ft. per min. Engine remained clean

(Continued from Page 51)

and fuel contamination cannot be purged from the engine.

In this connection it should be emphasized that oil contamination with water is a major factor in sludge deposits and where water contamination develops, sludge is almost sure to follow. Similarly, unburned fuel which has been subjected to the high temperatures and pressures of combustion chambers becomes "cracked" and partially oxidized. Such material on reaching the crankcase may readily develop gums and resins which further accelerate sludge formation.

Water contaminations of crankcase oil frequently occurs, but is not recognized, and many cases of badly sludged engines are thus incorrectly diagnosed. Here is an analysis of drain oil and sludge deposit samples from a city delivery truck which became badly sludged.

	Drain Oil %	Sludge %
Benzene Insolubles (Lead salts, soot and carbon)	2.8	46
Asphaltenes (Fuel Gums and oxidized oil)	.4	7
Lead as Bromide	.9	13
Fuel Dilution	9.4	—
Water	Trace	9

The drain oil analysis indicates no significant water contamination and would lead to the supposition that this was not a factor. Analysis of the sludge sample does show, however, that the trouble was a typical case of water-emulsion sludging. Water contamination may not remain in the oil but may readily deposit out along with solid contaminants to make sludge.

Sludge trouble in over-cooled engines can only be remedied by increasing temperatures, such as by installation of high set thermostats, partial covering of the radiator, covering of hood louvers, etc. It is furthermore to be hoped that automotive engineers may be able to develop improved engine temperature control to minimize over-cooling.

Crankcase Oil Temperatures

FIG. 9 shows crankcase oil temperature recordings of a typical light truck engine. In normal intermittent city service the oil temperature rose gradually on running and fell about as rapidly on standing idle. In this type of operation, the average oil temperature was only about 100 deg. F., which is totally inadequate to purge out fuel and moisture contamination. With crankcase insulation, the average oil temperature was increased about 40 to 50 deg. F. and more nearly approached a desirable range.

This same truck was taken out in the country for tests at sustained high speed. Under nearly continuous full throttle operation it required well over an hour to reach peak oil temperatures, which again emphasizes the fact that engine over-cooling is a greater problem than possible over-heating.

These temperature data are quite typical of a great many engines on the road and illustrate that crankcase insulation will provide a more rapid rate of oil warm-up, as well as higher average oil temperatures, more nearly in the range desirable for minimizing excessive blow-by and oil contamination.

Considerable study of crankcase insulation, as well as insulation of overhead rocker-arm cover valve compartment covers, etc., is indicating that insulation offers considerable benefit in minimizing blow-by contamination and sludge formation in engines which are over-cooled, either because of design or from intermittent operation.

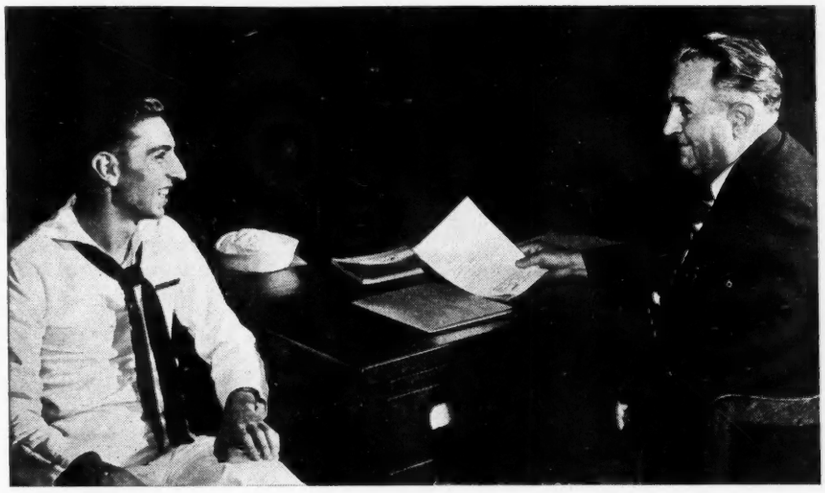
So much attention has been paid to laboratory engine tests run with oil temperatures of 200 to 300 deg. F., we seem to forget that oil temperatures in engines on the road are much lower, in fact far too much lower in all too many instances.

Crankcase Ventilation

CRANKCASE ventilation is also a vital factor in sludge formation. Most engine ventilating systems function effectively only at fairly high vehicle speeds and are very inefficient at idling or slow speeds.

Fig. 10 shows engine cover plates from two test runs, which illustrates the ventilation factor. Plate "UNV" is from a low temperature test with practically no ventilation, simulating light duty stop and go operation. As shown, this engine developed heavy sludge deposits. Cover plate "FV" is from an identical test run with the same oil and fuel except forced ventilation of 10 cu. ft. per minute was supplied. In this test the engine remained almost spotlessly clean.

Improved engine ventilation is receiving considerable study and work to date has indicated that really adequate ventilation is a "must" in overcoming sludge formation in light duty service. It is to be hoped that automotive engineers will soon develop improved ventilation devices, either as standard or as accessory equipment, for engines operating in light duty or intermittent service.



Even though they may not have civilian fleet experience, many veterans have useful trucking experience—clerical, despatching, mechanical or driving. Veteran above is being interviewed by a local board member for job placement

Make the Most of Veterans' Experience

Returnees were taught special skills, discipline and cooperation. One-third of military jobs have civilian relation

by COL. EMMETT G. SOLOMON
Chief, Veterans Personnel Division, Selective Service System

OUR soldiers and sailors are coming home from war. These ex-service men and women will comprise nearly 10 per cent of the Nation's population. They are returning to the community as its most valuable source of potential workers. The average veteran will be in better health than when he went away. He probably will have obtained a good deal of technical training and work experience. Many will have gained new understanding and maturity from their military experiences around the globe.

Few people realize that about one-third of all army jobs are related directly to civilian occupations, one-third indirectly related, and all related in some way. The long list of military occupations includes 1028 job titles. These 1028 kinds of jobs are related to nearly 17,500 civilian jobs covering 130 industries!

The Typical Returnee

IT WOULD be to the advantage of every employer to become acquainted with what has happened to the serviceman while he has been away and what kind of individual is expected to return. Does the employer know, for instance, that one-half will be less than 25 years of age and that two-thirds still will be single?

Does he realize that all have been taught discipline and that they respond to intelligent direction; that they have learned to get along on the job, and have been trained in importance of the cooperative spirit?

Does he understand that many have had an excellent opportunity to develop initiative and responsibility; that most have acquired specialized skills; and that many, who never have worked before, will return with job ambitions, looking forward to a chance to get ahead?

Does the employer know what has happened to his own former employees? How many will want to return to the company? How many will want to return to the old job? Whether any of them have suffered injuries that would disqualify him for the job held prior to entry into service? How many have learned new skills which will make them more valuable to the concern in a new job situation?

These are questions to which every employer should get the answer now.

Then there is the veteran who is looking forward to having another shot at choosing the kind of job he wants. He is going to seek all the help he can get from employers to assist him in making the vital decision which will govern what he does from now on.

Some forward-looking concerns have written personal letters to their former employees now in service. The substance of the letters reads: "Your job or a better one is awaiting you. When you come home, bring another well-qualified job seeker with you."

One company has sent out a letter to each former employee, asking the following questions:

1. What general or special training have you received since entering military service?
2. What are your present responsibilities?
3. Do you want to return to the company after discharge?

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THEY EARN WHILE THEY LEARN

Cost of the program is shared by employers and Federal Government, and works out advantageously for employer and apprentice. A given shop agrees to hire an approved veteran for a specified number of months, the period being long enough to provide the veteran with on-the-job training in most phases of the training program. The shop pays the apprentice a starting wage equal to 50 per cent of the established journeyman's rate in his community. At least once every six months the rate is increased by 5%.

Richard M. Good, left, a GI apprentice, acquires spray-gun technique from B. S. Russell, of Jones Motor Co.

A Training Program to Yield

Fleets participate in 4-yr., 19-phase, classroom and on-job course, initiated by Richmond, Va., automotive groups giving trainees full-time jobs with pay

TO A GROUP of automotive men in Richmond, Va., goes credit for what appears to be a nation-wide lead in the organization and establishment of an 8000-hr. on-the-job apprentice training program for automotive mechanics. Primarily set-up as an aid to returning World War II veterans who are eligible for financial assistance under the educational provisions of the "G. I. Bill of Rights," the program is also available without financial aid to non-veterans, and provides an important and greatly needed new source of skilled mechanics. In addition to the on-the-job phase which covers a normal working period of four years, the course also provides approximately 575 hours of class room work.

Training Cost is Shared

Fleet operators, jobbers and car and truck dealers are cooperating in the on-the-job phase of the training program by making their shops available as places of work for the enrolled veterans. To be eligible, each shop must be equipped to offer proper facilities for most of the major phases of the program and each employer must agree in writing to fulfill his particular obligation in the over-all training of the apprentice. The class-room work which includes laboratory facilities, is provided in four hours of night school per week at the Virginia Mechanics Institute, under the supervision of the State Department of Vocational Education. A coordinator is being employed by the school authorities to coordinate the shop and school experience of each apprentice to the closest degree possible.

COST of the program is shared by employers and the Federal Government, and work out advantageously for both employer and apprentice. A given shop agrees to hire an approved veteran for a specified number of months, the period being long enough to provide the veteran with on-the-job training in most of the phases of the training program. The shop pays the apprentice a starting wage equal to 50 per cent of the established journeyman's rate in his community. At least once every six months the wage rate is increased by 5 per cent.

Under the provisions of Public Law 346, "The G. I. Bill of Rights," and in certain instances under provisions of Public Law 16 pertaining to disabled veterans, the Federal Government makes up the differential between the wage and journeyman's wage, up to $65 a month, if the man is single, or $90 a month if he has a dependent. Children do not increase the benefit under Public Law 346. As the

1200 Shop Mechanics

Richard Napier, left, a GI apprentice, learns the latest wrinkles in con-rod refinishing from Ashby Truslow, shop foreman of Richmond Auto Parts Co.

trainee's pay increases, the government allotment decreases, amounting only to the difference between wage rate and guaranteed minimum. At no time may the trainee's total pay exceed the established journeyman's rate.

In addition, the Federal and State Governments pay all the salaries of the instructors in the night school, furnish all necessary text books and provide each student with a set of hand tools without charge. They are listed on page 226.

Hand-outs like that, even in this day and age, just don't happen. The whole program must be carefully organized, instructors secured, cooperating shops convinced of the merits and signed on the line, and, finally, the whole structure approved by the State Appenticeship Council.

Original Planning Committee

CREDIT for the program falls primarily in the ample laps of three men who formed the original planning committee and who were named respectively by the Automotive Trade Association of Virginia, and by local chapters of the National Highway Users Conference and the Society of Automotive Engineers. They are: William C. Howard, chairman, general service manager, Smith-Utterback, Inc. (Dodge-Plymouth dealer); Curry Obenshain, fleet superintendent, Brooks Transportation Co., Inc. (common carriers), and A. B. Spain, Bingham Truck Service (GMC dealer and lessor). These men, together with Robert H. Wilson, director of the Division of Apprentice Training, Virginia Department of Labor & Industry, produced an imposing prospectus of the training program, broken down into 19 major phases. They "sold" prospective employers on the merits of the program, secured instructors for the school, and obtained official state approval which carries with it an automatic approval for the Federal funds.

As the program got under way, three new members, representing the skilled employees, were added to the group which became known as the Richmond Automotive Apprenticeship Committee. The newer members are: Arthur Thorpe, East Coast Transportation Co.; Robert Hanna, also of Brooks, and A. A. Thompson,

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Training Program . . . . . .

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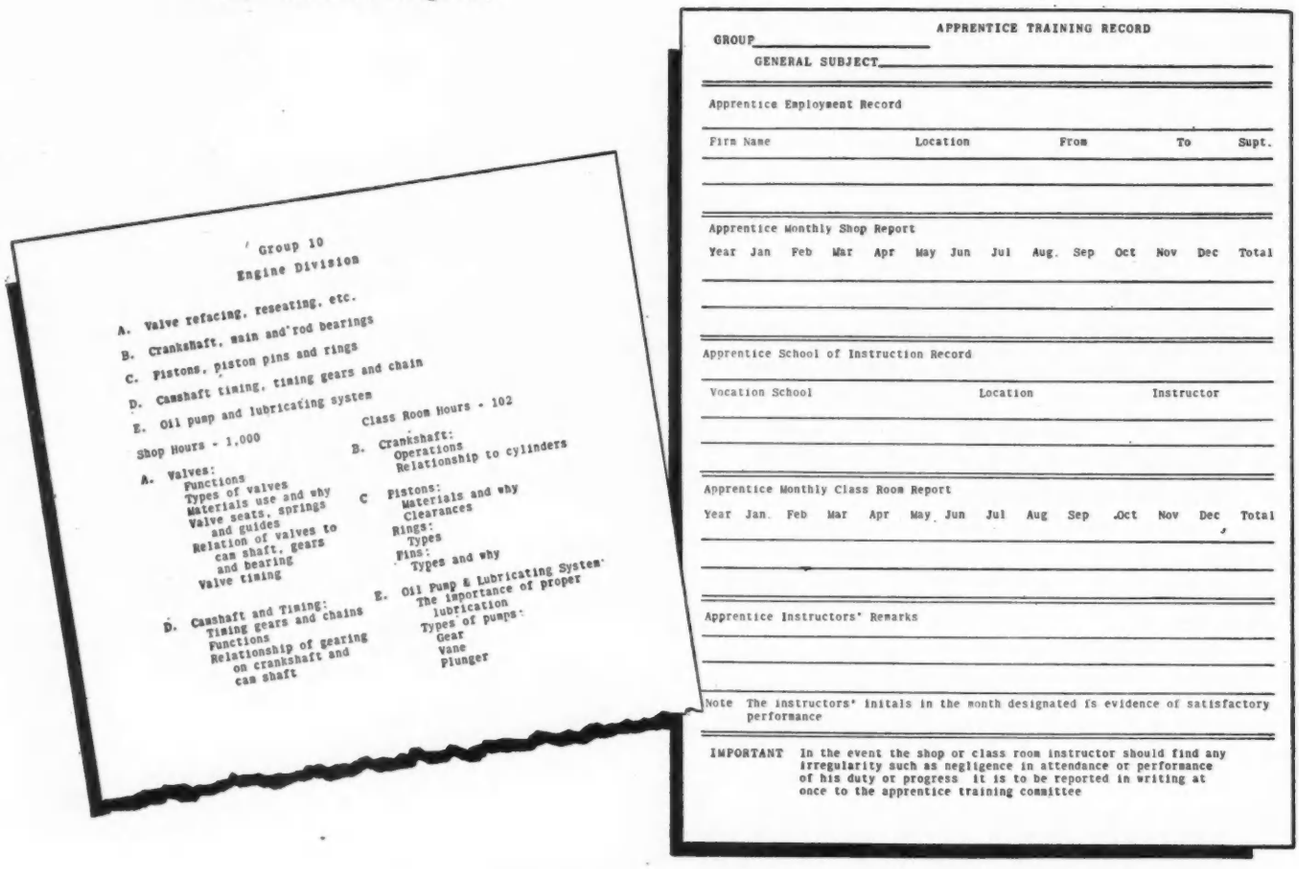

Group 10
Engine Division

A. Valve refacing, reseating, etc.
B. Crankshaft, main and rod bearings
C. Pistons, piston pins and rings
D. Camshaft timing, timing gears and chain
E. Oil pump and lubricating system

Shop Hours - 1,000

A. Valves:
Functions
Types of valves
Materials use and why
Valve seats, springs and guides
Relation of valves to cam shaft, gears and bearing
Valve timing

D. Camshaft and Timing:
Timing gears and chains
Functions
Relationship of gearing on crankshaft and cam shaft

Class Room Hours - 102

B. Crankshaft:
Operations
Relationship to cylinders

C Pistons:
Materials and why
Clearances
Rings:
Types
Pins:
Types and why

E. Oil Pump & Lubricating System:
The importance of proper lubrication
Types of pumps:
Gear
Vane
Plunger

APPRENTICE TRAINING RECORD

GROUP_____

GENERAL SUBJECT_____

Apprentice Employment Record

Firm Name	Location	From	To	Supt.

Apprentice Monthly Shop Report

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug.	Sep	Oct	Nov	Dec	Total

Apprentice School of Instruction Record

Vocation School	Location	Instructor

Apprentice Monthly Class Room Report

Year	Jan.	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total

Apprentice Instructors' Remarks

Note The instructors' initals in the month designated is evidence of satisfactory performance

IMPORTANT In the event the shop or class room instructor should find any irregularity such as negligence in attendance or performance of his duty or progress it is to be reported in writing at once to the apprentice training committee

Above, left—A typical sub-division of the training program. Right—The uniform training record. There are identical records for each of 19 phases

Right—Quentin L. Nicholas, Jr., at center, gets the know-how on rear axle work from two committee members, Robert P. Hanna, left, and Curry Obenshain, at Brooks Transportation Co. fleet shop

business agent, Machinist Local, No. 10.

Started November, 1945

AS OF Jan. 15, 1946, approximately 150 prospective apprentices, mostly veterans, had signed up in the Richmond area alone. On-the-job training got under way in November, 1945, and classes began Jan. 2, 1946. It is expected that by year's end approximately 1200 will be enrolled in a state-wide program.

The 19 major phases of the training program are broken down as follows:

Type Training	*Shop Hours*	*Classroom Hours*
Shop Procedure	30	12
Front Axle	400	24
Rear Axle	600	48
Bodies, Cabs & Sheet Metal	1000	30
Brakes	1000	54
Clutches	500	36
Cooling System	200	12
Electrical Units	500	54
Engine Division	1000	102
Exhaust & Muffler	50	3
Frame & Chassis	500	36
Fuel System	300	36
Lubrication	200	12
Springs & Shock Absorbers	100	9
Steering Gear	100	12
Transmission	500	45
Universal Joint & Drive Lines	100	12
Wheels, Tires, Hubs & Rims	300	18
General & Final—(New car delivery, accessory installation, road testing diagnosing & trouble shooting)	650	21
	8030	576

It is at once apparent that few if any shops could attain the goal, for

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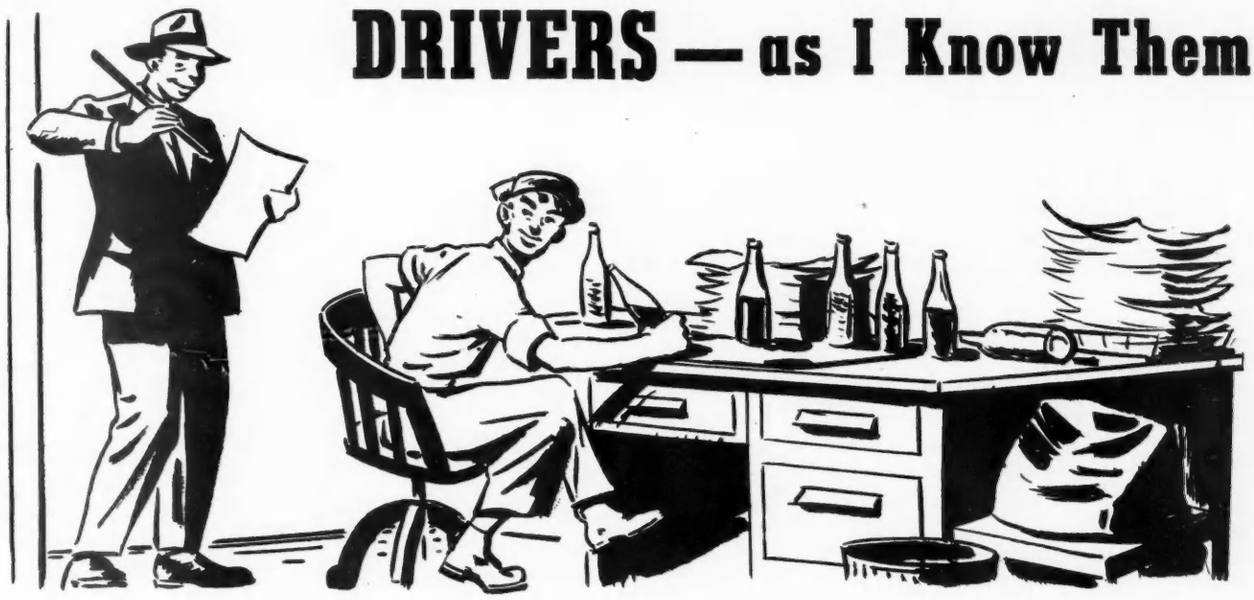
DRIVERS — as I Know Them



An Interview with

PETE R. O'LEUM

Editor's Note—CCJ, continuing its policy of giving its readers the inside of the industry, at any cost—and at any risk—again sent its ace reporter to interview Pete R. O'Leum, greasepert . . . this time on the subject of drivers. The Reporter found Mr. O'Leum happily mixing liquids in pop bottles on the Foreman's desk.

O'LEUM: "I dabble a bit in oils," he said modestly, "as well as greases. This bottle here is a new radiator flush. The radiator burps when it's had enough. And this one is a new soft drink for mechanics—but not too soft—which can also be used as a nut loosener . . . Hmmm . . . Now let's see . . . Sometimes I have a little trouble telling which is which . . . Ah, here's the pop. Sit down and try a bottle. The Boss is out getting a few quick . . . ah . . a . . a few parts."

REPORTER: "Mr. O'Leum, our Editor thought you would tell us your opinion of drivers—for publication, of course."

O'LEUM: "Yes, indeedy. I know drivers. Real over-the-road drivers. They're always under foot here. They can't stay away from their 'horses.' They go over to Nick's and have a few beers and hurry back to walk fondly around their horses, and — shake mirrors, fenders and running boards to find something for the mechanics to fix. They eye other horses jealously to see what they can steal . . . ah, that is, borrow to put on their own. Why one of them is trying to find a horn that whinnies. And, like all men on horseback, they are proud, dignified and demand attention.

"Want me to tell you something? Come closer. I hear they're going to present a demand that the Senior Driver (first out nights) is to be sent off with a ceremony. Yes, indeedy . . . a ceremony, no less. And guess what? He's to wear a fedora instead of a cap, with all his buttons and

mottoes like "Kiss me Quick" on his chest instead of around the edge of his cap. The way I get it they want the whole shop crew, including the Yardmen, to stand at attention when 'Pop'—he's first out nights—steps into the shop. He's to be greeted with three flourishes, two rolls, and a tattoo. The Foreman then escorts him around his outfit on inspection followed by all mechanics, helpers, tire men, and yardmen marching two by two. And get this . . . I'm supposed to precede him walking backwards swinging a censer from side to side to crown him with pleasant odors for his trip, but, (and here the black Irish in the O'Leum's flared up in his black, or is it blue, eyes . . . well, black and blue Irish eyes) . . . I'll crown him and not with incense either. You know we O'Leum's never swing anything away from anybody."

REPORTER: "Sounds pretty serious. Don't they ever relax?"

O'LEUM: "Well, they're in a pretty tough business you know. It's bad enough when Joe Suitcase, the mechanic, has to go out some night when it's 10 below zero and take shims out of a clutch, or put on a bottom radiator hose, but poor 'Pop' has his load on his back all night.

"And 'Pop' lets loose, too. I've heard them whispering of strange goings on, late on fine autumn nights in the moonlight, when the roads are deserted. Then they cavort and jockey on downhill curves, flying past each other, finessing gears, and wild moments when they miss their gear altogether while passing another on a curve with a car approaching. And when the fun is over, the cheerful wayside light and the steaming cup, the friendly counter girl, and big talk, big talk, big talk. And then the forty winks, perchance a dream

(TURN TO PAGE 162, PLEASE)

FREE PUBLICATIONS

USE THE POSTCARD—NO STAMP NEEDED

A selected list of the latest in literature—books, pamphlets, catalogs—chosen to help fleet operators solve maintenance and operating problems. Use free postcard.

L35. Lubrication Data

An 8-page publication on "Lubricating Oil Additives" is ready for distribution to the fleet field. As the title implies, this publications covers a detailed description of heavy-duty motor oils and the use of additives.

Lubricating oil additives are divided into two major classes for the purpose of discussion: those which are useful for their properties as associated with the phenomenon of oil oxidation; and those which are added to an oil to improve some physical property of the oil. The text, therefore, centers around the use of anti-oxidents, anti-corrosives and detergents. Actual photographs of engine parts show results obtained from tests made with various types and grades of motor oils.

This publication is effective in its presentation of some of the most important types of lubrication oil additives. It is a booklet that will be found interesting to any fleetman. Write L35 on the free postcard for a copy.

L36. Brake Reliner's Manual

An 80-page technical manual has been prepared to aid the service man with his problems in servicing and maintaining brake systems. Written in a clear, simple and effective manner, this publication deals primarily with the installation of brake linings and the adjustment and maintenance phases of such equipment on commercial vehicles. General instructions are included for the actuation and control mechanisms. Detailed instructions on the installation and application of the correct friction materials themselves are provided.

Included with the information on each type of brake is a trouble shooting chart, a description of operation, inspection procedures and a system for making adjustments. Each major procedure is complete with diagrams and drawings to simplify instruction.

The mechanic or shop foreman should appreciate the condensed and valuable information in this manual and should write L36 on the free postcard for a copy.

L37. Valve Service Data

A revised and up-to-date edition of a valve service booklet entitled "How to Service Valves in Ford-Built Motors" has been prepared for the fleetman. This new publication deals with instructions on valve assembly, replacement and grinding procedures in the Ford V-8 engine. Included in the 18 pages of text are diagrams and illustrations of correct removal and assembly steps, a camshaft position chart and a set of recommended valve tappet clearance tables for this type engine.

Head nut pressures, instructions for checking valve timing and a list of hints for eliminating valve noises, are covered in special sections. Special tools recommended for each job have been illustrated for the convenience of the mechanic. A copy is available for the writing of L37 on the postcard.

L38. Jet Propulsion Book

A new booklet on jet propulsion has been made available to the fleet field. This 32-page publication describes in non-technical language how a jet engine operates and some of the things science is doing to improve this new source of power.

While this booklet concerns itself primarily with aircraft power, many fleetmen will be interested in learning about the basic principles of jet engines as they may be applied to ground transportation in the future. Write L38 on the free postcard for a copy.

L39. Engine Bearing Manual

A new 20-page bearing manual entitled "Bearing Failures, Causes and Corrections" has been prepared by the technical staff of a well-known manufacturing company to aid maintenance men in analyzing bearing failures.

This manual, offered at an earlier date in this department, is reviewed again because of its importance and interest. Write L39 on the free postcard if you do not have a copy in your files.

NEW PRODUCTS

USE THE POSTCARD—NO STAMP NEEDED

The newest in replacement parts, accessories, shop equipment and supplies. For more details of products described or advertised on these pages, use the accompanying free postcard.

P224. Portable Extinguisher

The General Detroit Corp. and The General Pacific Corp. announce a carbon dioxide portable fire extinguisher in a complete range of sizes from 2 to 100 lb. Called CD-Sno Fog, the extinguisher is one of a complete line of Underwriters' approved fire extinguishers and allied products.

CD-Sno Fog is especially recommended for fighting fires in electrical equipment, oil, grease, and flammable liquids. Since the carbon dioxide is a nonconductor, it is safe to use on electrical fires even while the current is on. It leaves no stain on clothing, equipment, or premises.

CD-Sno Fog is made in 2, 4, 7½, 10, 15, 20, 50, 75, and 100-lb. sizes. Underwriters' Classification for the 15-lb. size is B-1, C-1.

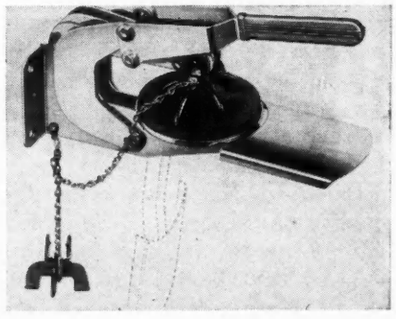
Use Free Postcard For More Details.

P225. Pressure Vulcanizer

Correct pressure is said to be a certainty with the V-65 Speaker Match Patch vulcanizer, a new product just announced by the J. W. Speaker Corp., Milwaukee, Wis.

Accurate vulcanizing pressure is automatically predetermined by toggle action, "bellows principle" wings and a rubber cushion that gives upward counter thrust. This compensates for varying thicknesses of tube rubber.

The vulcanizer has 8-bearing rocker arms, which insure smooth action. A swing-down tube last enables the operator to perform the buffing operation on the machine itself. A deep throat admits large tubes for proper centering, and specially-designed spiders allow ventilation for fuel combustion.

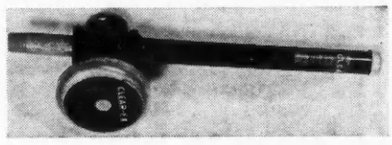


The V-65, made heavy-gage steel, is designed for vulcanizing-type replacement valves, small and large patches, oval or round. Sales are made through jobbers, but full information may be obtained from the manufacturer.

Use Free Postcard For More Details.

P226. Fuel Economizer

A new type of accessory claimed to improve fuel economy, provide smoother engine operation while running and idling, and a factor in producing cleaner combustion chambers has been introduced by DeLuxe Products Corp., La Porte, Ind.



The DeLuxe Clear-Ex (Clear Exhaust) is a simple automatic air valve which introduces air into the exhaust system of internal combustion engines. Attached to the exhaust manifold, it operates by utilizing vacuum which exists in the exhaust system. It is designed to clear the burnt gases remaining in the combustion chambers after the exhaust stroke and to replace those gases with fresh air.

At full engine load, Clear-Ex permits fresh air to enter the exhaust manifold. A vacuum ram created by inertia draws air through the Clear-Ex after each pressure wave of the exhaust. The air thus admitted is said to find its way into the cylinder through the exhaust valve by means of the same vacuum ram.

At deceleration it is said to permit air to be drawn directly into the cylinders because there is a vacuum in the

(TURN TO NEXT PAGE, PLEASE)

NEW PRODUCTS

USE POSTCARD BETWEEN PAGES 58 & 59

(Continued from Page 59)

cylinder when the exhaust valve opens. This is claimed to facilitate the complete burning of carbon monoxide gas and to dilute the carbon dioxide gas which would otherwise be trapped in the combustion chambers at the start of the intake stroke.

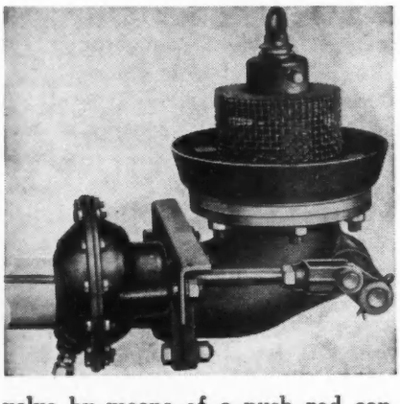
Use Free Postcard For More Details.

P227. Tank Truck Safety Valve

A pneumatic safety valve, manufactured by the Davisbilt Products Co., Cincinnati, Ohio, is being marketed to help prevent fire on tank trucks in case of an accident.

This safety valve can be installed on any truck or trailer equipped with air brakes, for it operates on the same compressed air. A back pressure valve insures against reducing the brake operating pressure below 65 lb. This eliminates brake failure from lack of air due to valve operation.

The control valve is the two-way type. Moving the valve in one direction admits air into the diaphragm chamber which, in turn, opens the



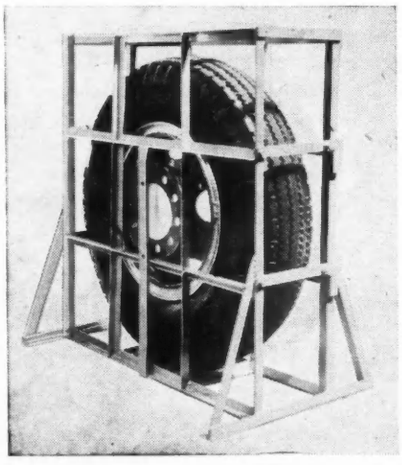
valve by means of a push rod connected to the valve lever. Pushing the control valve in the opposite direction connects the diaphragm chamber to the atmosphere allowing air to escape and the emergency valve to close.

The valves are said to operate regardless of temperature, climatic or atmospheric conditions. Fusible plugs, as well as a front-end or remote release, are also incorporated.

Use Free Postcard For More Details.

P228. Tire Inflation Guard

Belmont Body Builders, Newark, N. J., has developed a new tire inflation guard for safely inflating truck or trailer tires. The guard is



an all-steel frame welded into one integral unit which will accommodate any size tire up to 12.00 x 24. The frame can be installed permanently in a concrete floor, or it can be mounted on casters or on a service car. A special wire screen can be inserted to prevent small flying parts from causing damage.

The tire is simply rolled into the guard from either side. Rails protect the operator in case of blowouts or in event that the tire locking ring flys off. The tire rests on two rollers in the guards so that it is easy to revolve as required.

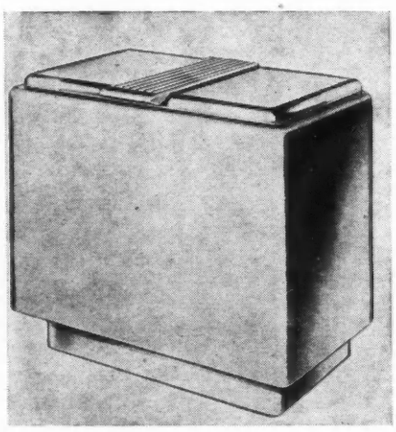
Use Free Postcard For More Details.

P229. Parts Cleaning Systems

Gray-Mills Co., Evanston, Ill., announces three new parts cleaning systems for the automotive field.

Model H-71 is a general utility unit—successor to Gray-Mills Model P-70. The new unit incorporates a centrifugal pump which is used for hose-cleaning parts and for agitating the fluid to accelerate the cleaning of either large parts or small parts cleaned in baskets. A means for air agitation is also provided. A safety device causes the cover to close automatically in case of fire. The overall size of this model is 38 in. long, 34½ in. high, and 21 in. wide.

Model J-75 is 60 in. long, 34½ in. wide, and 33½ in high. It is equipped with a high volume, high pressure rotary pumping unit for hose-cleaning engine blocks and other large parts.



The smallest of the three, Model L-73, is 21 in. wide, 21 in. long, and 34½ in. high. Being on casters, it is easily portable. It is frequently used for cleaning carburetors, fuel pumps, etc. All three units are similar in exterior design.

Use Free Postcard For More Details.

P230. Pneumatic Tire Spreader

A new air-operated tire spreader has been introduced by the Char-Lynn Co. of Minneapolis. The spreader unit includes a special wall bracket which may be placed at

most convenient working height allowing fast, easy inspection. The spreader operates with one hand to open a tire casing a full 11 in. A light built into the wall bracket floods the inside of the tire.

Use Free Postcard For More Details.

P231. Improved Barrel Lift

The Falstrom Co., Passaic, N. J., has designed a new model barrel lift which is said to enable a single operator to raise, transport, rotate, tilt and drain a fully-loaded oil drum without undue effort.

The lift is designed for standard 55-gal. parallel side steel drums, 23 in. in diameter and 36 in. in height.

Use Free Postcard For More Details.

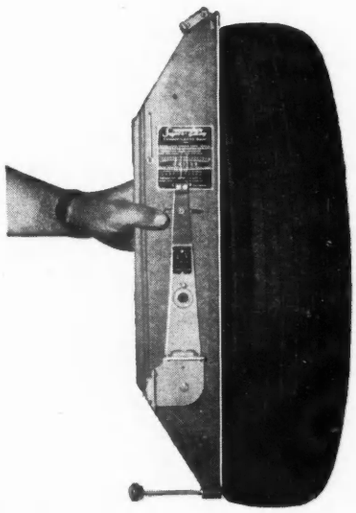
P232. Improved Driving Lights

Improvements have been made in the "Fog King" driving lights now manufactured by the Teleoptio Co., Racine, Wis. A new type of lens attaching screw holds the lens ring with greater firmness in a vibration-tight position. The rings are rustproof. The castings are amply protected against rust by either baked enamel or chrome finish. A new extra sturdy saddle mounting reinforces against bumps and shocks.

Use Free Postcard For More Details.

P233. Camber-Caster Gage

A new type of camber-caster gage, called the "Super-Easy" has been placed on the market by the Micro-Linor Service Corp., Detroit, Mich.



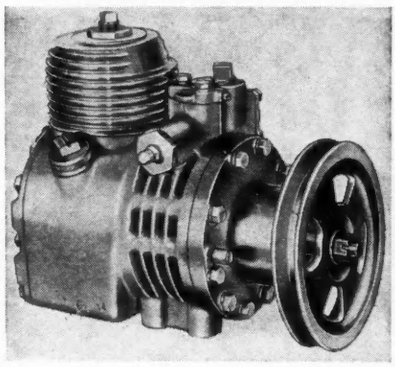
The gage has a built-in floor slope compensator which simply and quickly determines the floor slope. Once the gage is set to the floor slope, the slope is automatically compensated for in all readings.

The "Super-Easy" is said to be an inexpensive device for making camber and caster tests quickly and accurately. For example, the manufacturer states that the floor slope and one wheel can be checked for camber in 30 sec.

Use Free Postcard For More Details.

P234. Improved Air Compressor

The Wagner Rotary Air Compressor, built by the Wagner Electric Corp., St. Louis, Mo., has recently undergone refinements in design that improve its performance and further increase its adaptability.



Some of the improvements include: a more efficient oil filter with easily replaceable filtering element; larger bearings, assuring long life and quiet operation; and an improved type of rotary shaft seal.

Cooling has been improved by the addition of exterior fins to increase air cooling, and the use of a heat exchanger type end plate to increase water cooling. In addition, the inlet and discharge air passages have been enlarged and streamlined to increase volumetric efficiency of the compressor.

Improved oil economy has been accomplished by changes in the separating equipment in combination with the above improvements. The air pressure control valve has been made an integral part of the compressor, eliminating exterior tubing and making the unit more compact.

Use Free Postcard For More Details.

P235. Chrome Piston Ring

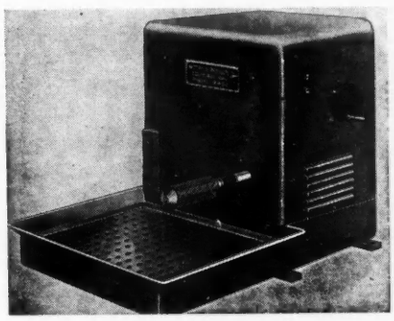
The Simplex Products Corp., Cleveland, Ohio, has developed a new chrome-plated piston ring which is said to provide a hard, wear-resisting surface that wipes the cylinder wall cleaner and provides lubrication, reducing friction and wear.

The ring is composed of two metals; one for quick seating and the other for long life, combined with an all-steel channel-type spacer oil ring. Chrome-plated steel side rails ride the spacer designed into the ring and alone contact the cylinder wall. The spacer is of unbreakable, full-groove-width steel. The scientifically designed expander of Swedish steel is center vented for straight-through oil drain. The design is such that it permits the entire ring-expander, spacer and rails to breathe as a unit.

Use Free Postcard For More Details.

P236. Improved Honing Machine

A newly designed honing machine particularly adapted to repair and maintenance of connecting rods, wrist pins, compressor cylinders and cylinder bores, using honing heads with which work can be produced to an accuracy of .0001 has been placed on the market by the Webster Products Co., Cleveland, Ohio. Model BM-50, a bench machine, is the horizontal type, with hone sizes available from .720 to 6.000 in. and a head expansion from .125 to .500 in.



An outstanding development of this model is the micro adjustment dial which permits expansion of the hone heads while in operation. The hone has 360 deg. of cutting surface, eight cutting edges per stone and six stones per set honing all the way around. Abrasives can be furnished for ferrous or non-ferrous metals.

Use Free Postcard For More Details.

P237. Circulator and Test Heads

Kerkling & Co., Chicago, has introduced a portable circulator and, also, aluminum test heads for the great majority truck engines.

With the use of this new equipment, major block repairs may be thoroughly tested, and K & W Metal-

(TURN TO PAGE 150, PLEASE)

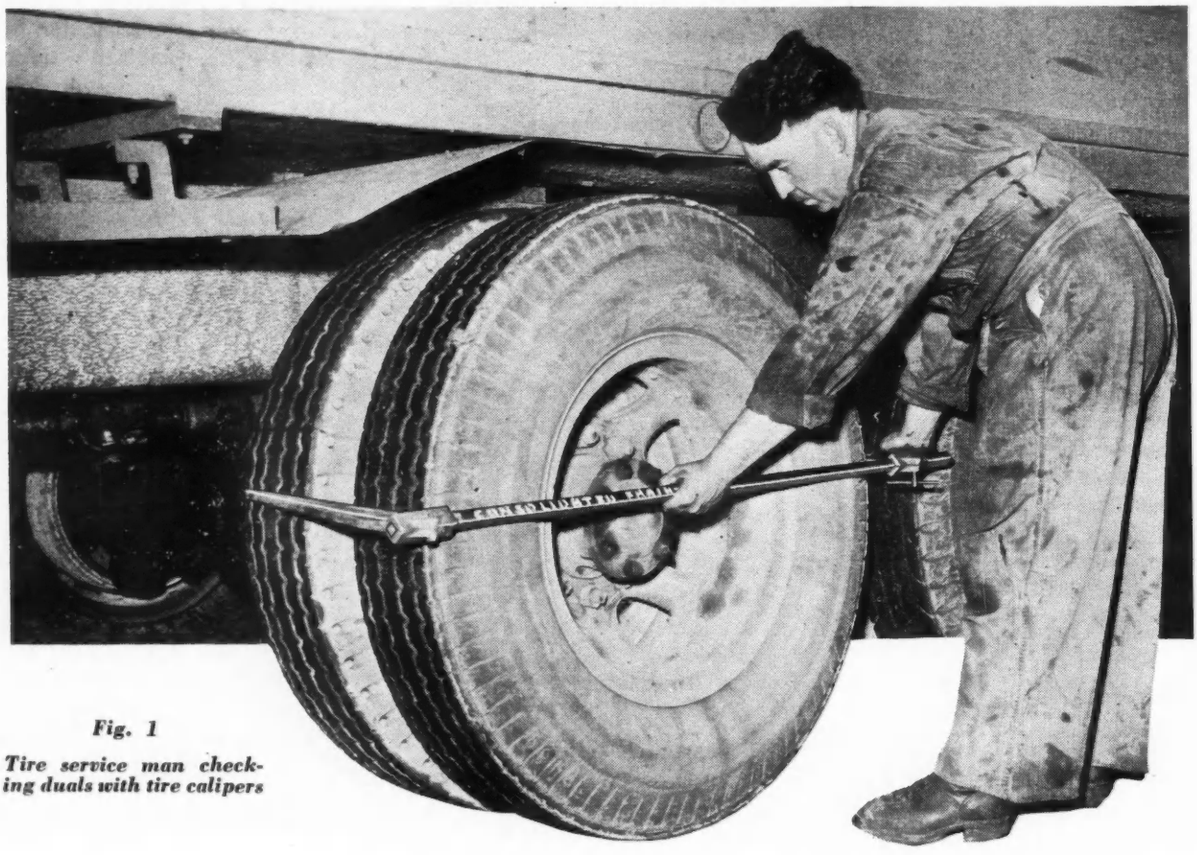


Fig. 1

Tire service man checking duals with tire calipers

JOB BREAKDOWN SHEETS . . . . .

A Pattern for Tire Maintenance Efficiency

Every operation has been worked out for thoroughness and maximum efficiency. Reproduced on separate sheets, step-by-step procedures insure good work at all shops

by WARREN E. CRANE

6-POINT INSPECTION

"Tires are given a complete service each time that the equipment is at its home shop and an inspection at any company shop that it may touch," says the author. This is what an inspection embraces:

"1. Check for flat tires.

"2. Measure tires to see that they are properly mated as duals and matched as to rolling radius.

"3. Inspect tires for proper inflation pressure.

"4. Check wheel nuts for tightness.

"5. Check for premature wear due to wheel misalignment, improper braking and loose bearings.

"6. Record tire brand numbers every No. 1 service period on the Monthly Tire Record."

2A

CONSOLIDATED FREIGHTWAYS

Monthly Tire Record Card

FORM 491

Truck or Trailer No. 101 Station Seattle Run Oakland Month of Feb 1946

POSITION	DATE Brand Numbers	MILES Leave Blank Below
LFO	R100	1800
LFI	B100	1800
LCO	Z100	1800
LCI	A100	1800
LRO	J100	1800
LRI	K100	1800
RRO	L100	1800
RRI	V100	1800
RCO	B100	1800
RCI	B101	1800
RFO	B102	1800
RFI	B103	1800
SPARE		XXX

3A

Form No 368

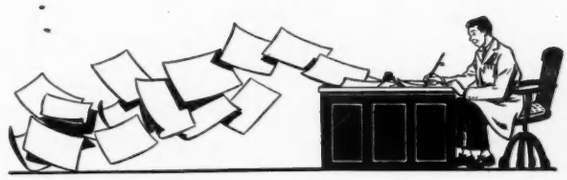
TIRE SERVICE RECORD Station SEATTLE

Date 2/20/46

Equip. No.	Location of Flats	Work-man	Repair Chains	Work-man	Match & Mate	Air Tires	Check Tire Co.	Check Wheel Nuts	Check Alignment	Insp & Remove Tires for Rpr or Recap	Work-man
83						X			OK		
387					✓	X					R
828			X	M							
161	LRO	R			✓		X	✓		RCI RFO	R
229											M
151											
242					✓	X					
219	RFI		X	M	✓	X		✓			

Instructions See Tire Service Bulletin No 1.

Left. Monthly Tire Record Card, 8 x 11 in., used for recording the brand numbers. Below, Tire Service Record Sheet, 8½ x 11 in., used to plan work



THE article entitled, "Fleet's Tire Program Ups Mileage 126%" which appeared in the January, 1946, issue of COMMERCIAL CAR JOURNAL mentioned that "As part of the tire maintenance system, the company has found it helpful to furnish a complete set of job breakdown sheets for the instruction of its employees. Every operation has been worked out for thoroughness and maximum efficiency."

Details concerning the job breakdown sheets were omitted at that time due to space limitations. This article not only will furnish the details but will reproduce one complete set. The set selected, appropriately enough, will concern Consolidated Freightways' unusual tire maintenance program.

Of course, the job breakdown sheets are but part of a thorough maintenance program and an efficient maintenance control system. How this is coordinated was explained by Ray Kupp, Consolidated's tire maintenance engineer.

Three Inner Departments

"WE HAVE maintained an overall tire program and have systematized the maintenance of our tires in such a way that it includes both servicing and reconditioning," said Mr. Kupp. "Our tire department at Consolidated Freightways consists of the three inner departments: 1. Service; 2. reconditioning; 3. accounting or the keeping of records.

Our tires are given service at all of our shops in Portland, Seattle, Spokane, Oakland, Boise, Salt Lake City, Billings, and Minneapolis. We also operate two reconditioning plants. One is here in Seattle; it handles the far western states. The other, located at Billings, Mont., takes care of Montana and the eastern division.

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Job Breakdown Sheets . . .

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The Seattle unit operates four recap tables and two sectional molds while the one in Billings has three recap tables and two sectional molds.

Both of these big shops are fully equipped to handle all reconditioning with spreaders, drills and buffing lathes and various modern equipment. Our plants have a capacity of 60 recaps and 30 sectional repairs daily during a 24-hr. period."

6-Point Inspection

ACCORDING to the regulations of the firm, a complete inspection consists of compliance with the following:

1. Check for flat tires.
2. Measure tires to see that they are properly mated as

(CONTINUED ON NEXT PAGE)

JOB No. 1

Part: TIRES ON VEHICLES — Important Steps In The Operation	Operation: INSPECTION OF — Key Points
1. Test for flats by hitting with tire hammer.	1. If tire is nearly or fully inflated a sharp rebound will occur. 2. Less than 50 lb. of air in 10.00x22 tire must be considered flat if there is no leak in tire valve mechanism.
2. Check mating as duals by measuring overall tire diameters with shop tire calipers.	1. Smallest tire must be inside not to exceed ½ inch differential on truck drive axles and not to exceed ¾ inch on trailer axles.
3. Check matching between and across drive axles as in Step 2.	1. Tires on same side should be the same and must not exceed differential of ⅛ inch O.D. between dual drive axles. 2. Differential of tires across axles must not exceed ½ inch O.D.
4. Inspect for serious tread cuts or injuries and make note of necessary removals.	1. Jack up wheels and rotate, if time permits. 2. Remove rocks imbedded in cuts. 3. Tires (except R.O.) in which a cut extends through the tread into the carcass should be removed for repair.
5. Inspect for tires requiring recap and make note of necessary removals.	1. Tires should be recapped as soon as skid design has disappeared in center of tread.
6. Check inflation pressure.	1. Be sure gauge is accurate. 2. Learn inflation table for 10.00x22 tires on various types of vehicles which appears in Mechanics Bulletin from time to time. 3. See that valve caps are replaced.
7. Check wheel nuts for tightness by testing with socket-bar-extension wrench.	1. 500 ft.-lb. recommended. 2. Tighten inside nuts first and then outside nuts.
8. Check for premature tread-wear and make note of faulty conditions.	1. Incorrect camber—excessive wear on tread shoulder. 2. Incorrect toe-in—feather-edge wear or scuffing tread wear. 3. Loose wheel bearings—large cupping wear across tread.
9. Check tire chains during season and make note of necessary repairs.	1. Check for broken cross chains. 2. See that end-connecting hooks work freely. 3. See that side chain links are not badly worn.

JOB No. 2

Part: Monthly Tire Record Card-Form 491 — Important Steps in The Operation	Operation: Recording Tire Brand Nos. and Mileage — Key Points
1. Issue Form 491 for each linehaul vehicle assigned to your shop.	1. Issue Form 491 of each month with monthly service card, Form 58. 2. File with original (shop copy) of Form 58.
2. Record mileage at each No. 1 Service period performed by home shop.	1. Enter mileage at top of next unused section of Form 491 since last No. 1 Service was performed at home shop. 2. Hold out Form 491 for listing of brand numbers. 3. Use two or more cards if necessary during month.
3. Record tire brand numbers.	1. Make physical check of tire brand numbers before any changes are made. 2. List brand numbers of tires on vehicles in proper wheel position. 3. Enter date at top of section used.
4. File Form 491.	1. Make check in date column of Monthly Service Card, Form 58, on date brand numbers and mileage was entered. 2. File in pigeon hole with Monthly Service Card when entries have been completed.
5. Send to Maintenance Dept., Portland.	1. Send with Monthly Service Card at end of each month.

JOB No. 3

Part: TIRE SERVICE RECORD FORM 368 — Important Steps in The Operation	Operation: RECORDING TIRE WORK — Key Point
1. "Equipment No." — list vehicles that have arrived since preceding day.	1. Verify information from Daily Schedule Report, Form 349. 2. Check Form 349—3 or 4 times daily.
2. "Location of Flats"—List wheel location of flat tires in proper space in column.	1. When tire has been changed, workmen should initial adjoining space in column headed "Workmen."
3. "Repair Chains" — draw diagonal line through space of vehicle requiring tire chain repairs.	1. When repaired, workman should draw the opposite diagonal line forming an "X" and place initials in adjoining space in column headed "Workman"
4. "Match and Mate"—list wheel location of mismatched or mismated tires in proper space in column.	1. When corrected, workman is to draw line through wheel locations.
5. "Air Tires"—draw diagonal line through space of vehicle requiring air check.	1. If possible, all vehicles should be aired every trip. 2. Schedules over 500 miles R.T. must be aired. 3. Schedules under 500 miles R.T. must be aired at least every other trip. 4. When done, workman should initial space in column or draw the opposite diagonal line forming an "X."
6. "Check Tire Card"—draw diagonal line through space of vehicle requiring a tire brand number listing.	1. List tire brand Nos. on Form 491. 2. See Job Breakdown Sheet No. 2.
7. "Check Wheel Nuts" — draw diagonal line through space of any vehicle which obviously needs wheel nuts tightened.	1. Draw opposite diagonal line or initial space when done. 2. Report two or more broken or stripped wheel studs per wheel.
8. "Check Alignment" — list any misalignment condition.	1. Initial space if apparently O.K. 2. Report misalignment conditions to Shop Foreman for correction.
9. "Inspect and Remove Tires for Repairs or Recap"—list wheel locations of tires requiring repair or recap.	1. When changed, draw line through wheel location and initial adjoining space in column headed "Workman."

JOB No. 4

Part: TIRES — Important Steps In The Operation	Operation: PLACEMENT OF — Key Points
1. Use new tires on front wheels of trucks or tractors.	1. As a safety factor, do not use tires that have been repaired on front wheels. 2. Allow tires to wear down ½ original skid depth (8/32 to 10/32 in. remaining in center channels).
2. Use worn tires removed from fronts on truck drive wheels.	1. Be sure to properly mate and match tires.
3. Tires on which no grooved line appears under the brand number are perfect carcasses and should be used on drive wheels.	1. Perfect carcass recaps should not be used on four-wheeler drive wheels during hot- weather.
4. Tires on which one grooved line appears under the brand number should be used on trailers and on six-wheeler drive wheels.	1. If possible, it is best not to use this tire on six-wheel drive wheels during hot weather.
5. Tires on which two grooved lines appear under the brand number should be used on last two axles of six-wheel trailers.	1. It is permissible to use this tire on four-wheel trailers and front axle of six-wheel trailers during cool weather.
6. Tires on which "RO" is branded under the brand number must be used on last two axles of six-wheel trailers only.	1. "RO" tires are to be worn out and not removed for further repair or recap.

JOB No. 5

Part: TIRE CALIPERS AND TIRE MATCHING GAUGE	Operation: USE OF
Important Steps In The Operation	**Key Points**
A. Shop Tire Calipers:* 1. Hold stationary arm of calipers against tread of tire with long rod contacting sidewall of tire at two points.	1. Tire must be mounted on wheel and fully inflated. 2. Use calipers on opposite side from wheel dish.
2. Bring sliding arm in contact with tread at furthermost point.	1. Do not exert enough pressure on rod to bend it.
3. Note scale reading on long rod when sliding arm is at the furtherest point.	1. This is overall diameter of tire.
B. Tire Matching Gauge. 1. To be used when making tire changes on the road.	1. Gauge carried in cab of all six-wheel trucks and tractors.
2. Do not measure flat tire but always the tire in the same position either forward or behind as the case may be.	1. If RCO is flat, measure RRO—if RRI is flat, measure RCI.
3. Holding gauge square with the tire section, place the small upturned end against the underside of the rim.	1. Be sure end contacts metal and not grease or mud.
4. Open wing screw so that it clears tire tread and turn down until you can feel the tire tread against the screw.	1. Should not be more than 1 or 2 in. shift of screw-end to the left and right, forward and back.
5. Set lock nut which gives measurement to use in replacing flat.	1. This gives measurement to be used in selecting tire to replace flat.

*See Fig. 1.

JOB No. 6

Part: TIRES	Operation: MATING AND MATCHING
Important Steps In The Operation	**Key Points**
1. To properly mate, place the smaller of two tires in the inside position.	1. Do not exceed ½ in. O.D. differential on drive wheels. 2. Do not exceed ¾ in. O.D. differential on trailer wheels.
2. To properly match tires between axles, place tires of same overall diameter on rear and center axles on same side of vehicle.	1. All dual drive vehicles. 2. Any slight differential in O.D. must not exceed ¼ in.
3. To properly match tires across axles, place tires of same overall diameter on each side.	1. Both single and dual drive vehicles. 2. Any differential in O.D. must not exceed ½ in.

SUMMARY:
1. All dual tires must be mated.
2. Dual tires on dual drive vehicles must be matched between axles on same side.
3. Dual tires on both single and dual drive vehicles must be matched across axles.

JOB No. 7

Part: TIRES	Operation: MOUNTING ON WHEELS
Important Steps In The Operation	**Key Points**
1. Insert a fully deflated tube without valve core in valve.	1. Before inserting tube, see that all dirt or foreign matter is removed from inside of casing. 2. Inflate tube, working your hand or tire iron between tube and casing in two or three locations to free trapped air. 3. Inflate further until beads of tire spread about 2 in. more than their original position.
2. Insert flap.	1. Perform while allowing air to exhaust. 2. Start by placing hole in flap over valve stem and working flap edges between tube and inside the carcass around the tire.
3. Screw valve core in valve.	1. Before taking next step, select proper size wheel and be sure to note whether R-L or BO type. (See wheel description on Breakdown Sheet No. 8.)
4. Apply tire to wheel.	1. Have wheel setting over a block or stand so that bottom tire flange is raised about 2 in. from floor. 2. Roll tire between yourself and wheel so that valve stem is at the bottom with end of valve pointed toward you and in line with valve slot in wheel. 3. Lay top of tire over wheel—raise bottom of tire and push forward. 4. Keep valve in line with valve slot in wheel and keep tire in a horizontal position while moving it into position to drop on wheel. 5. If tire is not in a near horizontal position when it starts on the wheel, it may bind—lift up on part of tire which is lower.

duals and matched as to rolling radius.

3. Inspect tires for proper inflating pressure.

4. Check wheel nuts for tightness.

5. Check for premature wear due to wheel misalignment, improper braking and loose bearings.

6. Record tire brand numbers every No. 1 service period on the Monthly Tire Record, which is a card 8x11 in. in size and is shown at Fig. 2A.

Another tire record in use is shown at Fig. 3A. The purpose of this form is to plan the work and to see that all of it is covered. It makes it possible for tires to be serviced with the minimum of wasted effort.

Instructions regarding the use of these forms will be

(TURN TO NEXT PAGE, PLEASE)

JOB No. 8

Part: WHEELS	Operation: ASSEMBLING
Important Steps In The Operation	**Key Points**
A. NOTE—FIRESTONE TYPE R WHEEL IS A SOLID BASE RIM WITH BACK TIRE FLANGE INTEGRAL AND A CONTINUOUS SIDE RING WHICH FORMS THE OTHER TIRE FLANGE TO WHICH A SPLIT LOCKING RING IS LOOSELY ATTACHED BY RIVETS AT ONE END OF LOCKING RING.	
1. Place lock ring assembly over rim with end of locking ring diametrically across from valve slot in rim.	1. Be sure to use proper lock ring assembly. 2. Place off center so that a ring tool can be inserted in ring gutter and over the ring assembly near attached end of lock ring.
2. Engage attached end of locking ring in ring gutter.	1. Force assembly downward with tool. Hit outer edge of ring with hammer, forcing attached end of locking ring in ring gutter.
3. Force assembly, which is now in a tilted position, downward until it fully contacts side of tire bead.	1. Hold engaged portion of locking ring into position with ring tool. 2. Force assembly down with a blow or two of a hammer diametrically across from the engaged side.
4. Engage rest of locking ring in ring gutter.	1. Tap into place with hammer or force in with ring tool while tapping side ring with hammer. 2. A sprung locking ring can be held in position by slipping a tire iron between the bottom of the side ring and the tire bead and prying up on side ring. Inflating the tire slightly—LESS THAN 10 LB. PRESSURE will hold it in place.
5. Check carefully to see that locking ring is securely seated before inflating to high pressure.	
B. NOTE—GOODYEAR TYPE L WHEEL IS A SOLID BASE RIM WITH BACK TIRE FLANGE INTEGRAL AND A SPLIT LOCKING RING. WHICH FORMS THE OTHER TIRE FLANGE, HAVING NOTCHED ENDS THAT BUTT TOGETHER AND LOCK WHEN IN POSITION.	
1. Start one end of the split lock or side ring in ring gutter diametrically across from valve slot in rim.	1. Be sure to use proper lock ring! 2. With pressure of your heel or hammer, working around the rim, force ring downward and into position.
2. Seat ring securely in ring gutter.	1. Inflate tire with a little pressure LESS THAN 10 LB.—tapping ring inward with hammer.
3. Check carefully to see that ring is securely seated before inflating to high pressure.	

JOB No. 9

Part: WHEELS	Operation: DISASSEMBLING
Important Steps In The Operation	**Key Points**
A. FIRESTONE TYPE R: 1. Remove valve from valve stem.	1. Exhaust all air completely from tire before attempting to disassemble.
2. Insert ring tool in notch in free end of locking ring and remove from ring gutter.	1. Pry outward while tapping side ring with hammer. 2. Remove remainder of locking ring for distance of ¾ its circumference.
3. Remove whole assembly.	1. Insert tool under assembly opposite the still locked position and pry upward or outward.
B. GOODYEAR TYPE L: 1. Remove valve core from valve stem.	1. Exhaust all air completely from tire before attempting to disassemble.
2. Insert ring tool into ring notch and pry off.	1. A couple of blows with hammer on outer edge or detached end of ring is helpful while prying off.

Job Breakdown Sheets . . .

(Continued from Page 65)

found in Job Breakdown Sheets No. 2 and 3, respectively.

The tires are given a complete service each time that the equipment is at its home shop and an inspection at any company shop that it may touch. The company has found it necessary to do this during the past three years as the units have been subjected to strenuous wartime operation frequently, have rolled night and day on the long distance schedules.

19 Tire Job Breakdowns

THE tire service operations consists of the following job breakdowns:

1. Inspection of the tires on vehicles.
2. Recording tire brand numbers and mileage.
3. Recording tire work.
4. The placement of tires on the vehicle.

(TURN TO PAGE 69, PLEASE)

JOB No. 10

Part: TIRES	Operation: DISMOUNTING FROM WHEELS
Important Steps In The Operation	Key Points
1. Tires which are stuck usually can be loosened by holding tire upright with dish of wheel on far side and pushing over so that dish of wheel strikes floor.	1. Do not beat wheel from tire by hammering on wheel dish.
2. Tires which are frozen to wheel require more than a jolt to loosen and may have to be worked off.	1. Set on block with dish side of wheel toward floor. 2. Work tire iron between wheel flange and tire head. 3. Pry tire bead away from wheel flange while hitting bead with wedge end of tire hammer. 4. Work bead down evenly.
3. Whenever possible, lift wheel from tire.	1. Do not attempt to kick wheel from tire while other workmen are nearby.
4. Remove flap.	
5. Remove tube.	

JOB No. 11

Part: WHEELS	Operation: CHANGING ON VEHICLES
Important Steps In The Operation	Key Points
1. Place jack under axle or axle housing and raise axle until most of weight is lifted.	1. Do not place jack under differential bowl.
2. Break outer wheel nuts and also inner wheel nuts if inside tire is to be removed.	1. Right hand threads of right hand side of vehicle and left hand threads on left side.
3. Raise jack until tires clear the ground and spin off nuts.	1. Drop nuts in can of cleaning solvent—DO NOT USE OIL ON WHEEL NUTS.
4. Remove wheels.	1. Use bar or extension handle as a lever under tire to move it out and over end of hub.
5. In replacing wheels, place wheel hub hole in line with hub with bottom of tire slightly under hub.	1. Dish of inside wheels faces outward and that of outside wheels faces inwards. 2. It is often necessary to raise or lower jack to line up studs with wheel holes.
6. Move wheel in and over hub.	1. Turn wheel until studs line up with holes in wheel. 2. Valve stem of outside tire must be diametrically opposite valve stem of inside tire.
7. Pull up wheel by setting up three nuts at triangular point positions.	1. Be sure nut seats are centered in hole seats in wheel.

(Continued top of next column)

JOB No. 11—continued

Part: WHEELS	Operation: CHANGING ON VEHICLES
8. Replace rest of nuts and draw up firmly.	1. Lower jack until weight rests on tires. 2. Cinch nuts tight with aid of two or three ft. extension handle (500 ft.-lb.). 3. Using a "Jari Shock Wrench" set up nuts until they no longer turn under impact of normal swing.
9. In removing outer wheel only, be sure to tighten innner wheel nuts before replacing outside wheel.	

NOTE—Front wheel tires of trucks should be removed from wheels and not the wheels from hubs unless wheels are in bad order.

JOB No. 12

Part: PNEUMATIC WRENCH	Operation: USE OF
Important Steps In The Operation	Key Points
1. Use air wrench as a speed wrench only.	1. Continuous impacting of wrench is hard on machine and often fracture wheel studs.
2. Break tight nuts with socket-bar-extension wrench.	
3. Spin off nuts with air wrench.	1. Keep nuts clean by dropping in can of cleaning solvent.
4. Spin on nuts and stop as soon as impacting starts.	1. Do not allow more than three or four impacts.
5. Cinch up nuts with socket-bar-extension wrench.	1. 500 ft.-lb. recommended.
6. Watch maximum air pressure when operating pneumatic wrench.	1. With ½ in. air line operating air pressure should not exceed 125 lb. 2. With ¾ in. air line operating air pressure should not exceed 90 lb.

JOB No. 13

Part: TIRE INFLATION	Operation: CHECKING AND INFLATING
Important Steps In The Operation	Key Points
1. Know inflation table for 10.00 x 22 tires on various wheel positions and types of vehicles.	1. Information presented by special bulletin and in Mechanics' Bulletin. 2. Check air when tires are at normal temperature—do not bleed hot tires.
2. Remove valve cap or caps if dual tires.	1. Place on wheel base.
3. Engage air gauge chuck on end of valve stem and note reading on gauge.	1. Check gauge once weekly for accuracy. 2. Provided there is no leak in valve mechanism, 10.00x22 tires should be considered flat when pressure reads below 50 lb.
4. Engage air line chuck on end of valve stem or press trigger if using chuck gauge.	1. Inflate to proper pressure. 2. A struck valve core can be released by tapping valve with air chuck or unscrewing and tightening valve core. 3. Check valve core for leak.
5. Replace valve caps.	1. Screw caps down finger tight.
6. Check spare tire if one is carried.	

JOB No. 14

Part: TIRES	Operation: SHIPPING OF
Important Steps In The Operation	Key Points
1. Ship tires for major repair or recap to proper tire reconditioning plant.	1. All points in Montana Division east of Missoula, Eastern Division, and Pocatello, send tires to Billings tire shop. 2. All other points send tires to Seattle Tire Shop.
2. In lining up tires for shipment mark "C.F.—destination" on side of tire bead and "From—shipping point" on top of tire bead.	1. Use yellow tire crayon which can be obtained from Portland stockroom.
3. Mark brand number on top of tire tread.	
4. Issue bill of lading showing approximate weight and deadhead, company.	1. Under quantity and description list brand numbers which were marked on top of tire tread under Step No. 3.

Job Breakdown Sheets . . .

(Continued from Page 66)

5. Use of tire calipers and tire matching gage for the mating and matching of tires.
6. Mating and matching tires.
7. Mounting of tires on wheels.
8. Assembling wheels.
9. Disassembling wheels.
10. Dismounting tires from wheels.
11. Changing wheels on vehicles.
12. Use of pneumatic wrench.
13. Checking and inflating tires.
14. Shipping of tires.
15. Repairing tread cuts.
16. Repairing tire chains.

(TURN TO NEXT PAGE, PLEASE)

JOB No. 15

Part: SPOT PLATES	Operation: REPAIRING TREAD CUTS
Important Steps In The Operation	**Key Points**
1. Spot plate cures should be limited to minor repairs.	1. Tread cuts no more than 1 in. long which go no deeper than ½ carcass plies. 2. Larger cuts which go no deeper than two carcass plies.
2. Using flexible shaft power insert rasp in cut and grind out edges of cut, leaving a roughened bevel.	1. Be careful to go no deeper than cut. 2. Apply force toward outside edges of cut in a circular motion. 3. Make bevel about 45 deg.
3. Clean tread surface around cavity with wire wheel brush.	1. Use air to blow out loose grindings.
4. Apply one thin but thorough coat of vulcanizing cement to the cavity.	1. Allow to dry.
5. Pack cavity with spot stock slightly higher than tread surface.	1. Use screwdriver and force spot stock together tightly so there is no trapped air in repair.
6. Set tire on spot plate with tread repair in center of plate.	1. Insert sand bag and center. 2. Insert horse shoe arm. 3. Swing arm of plate over horse shoe arm.
7. Turn screw down tightly with both hands.	1. Cure 2 hr. for cut ¾ in. deep at 60 lb. steam pressure. 2. Cure 2½ hr. for cut 1 in. deep.
8. If time is an important factor, tires may be repaired and cured while mounted.	1. Swing spot plate arm inside wheel and turn screw down against base of rim to exert pressure.
9. Secure tools and repair materials from Seattle Tire Shop.	

JOB No. 16

Part: TIRE CHAINS	Operation: REPAIRING
Important Steps In The Operation	**Key Points**
1. Replace broken cross chains or ones badly worn.	1. Use Weed 711 pliers to open and shut cross chain hooks. 2. Replace with cross chains of same length and approximate wear, if possible, or new ones. 3. Be sure to hook cross chains in correct side chain link and in proper side of link.
2. Straighten, if possible, or replace end connecting hooks that do not operate freely.	1. If replacing, saw through side chain link to which E.C.H. is fastened—spread link at part and remove E.C.H. 2. Install new E.C.H.—close and weld side chain link. Be sure lock or catch is on E.C.H. and hook is turned in right direction (inward).
3. Renew side chain links which show over 1/3 wear of metal at ends of links.	1. Watch end links of side chains particularly. 2. Cut through side of link and spread apart to remove worn ones. 3. Replace with new links, close splicing link and weld.
4. Fit chains to tires when driver reports a misfit chain—correct.	1. Watch reverse side of truck logs during chain season—see shop foreman on driver reports.

JOB No. 17

Part: SYNTHETIC RUBBER TUBES	Operation: REPAIRING INJURIES SMALLER THAN ½ IN.
Important Steps In The Operation	**Key Points**
1. Buff the outside of the tube around the injury ½ in. in all directions.	1. Remove glaze—buff cross-sectionally and not circumferentially. Buff off any sharp edges of injury.
2. Wash off the buffed surface with clean cloth moistened with rubber solvent.	1. If possible, also wash the edges of the injury.
3. Apply one light coat of quick cure vulcanizing cement to buffed area.	1. Permit cement to dry thoroughly.
4. Fill the injury level with the outer surface of the tube with quick cure tube gum.	1. Stitch down thoroughly.
5. Cut a disc of 1/16 in. gauge quick cure tube gum ¼ in. smaller than the buffed and cemented area and center over the injury.	1. Stitch down tightly.
6. Clamp the tube onto a hot plate using a substantial pad or pressure block between clamp and tube.	1. Be sure the tube lies smoothly between plate and pressure block. Do not allow a fold to occur within ½ in. of the edge of the pressure block.
7. Cure passenger tubes 5 to 7 min. Cure truck tubes 12 to 15 min.	1. Temperature—287 deg. and not to exceed 310 deg. Fahr.
8. Do not inflate tube until after the repaired area is thoroughly cool.	1. Dip in cold water to speed cooling.

JOB No. 18

Part: SYNTHETIC RUBBER TUBES	Operation: REPAIRING INJURIES ½ IN. AND LARGER
Important Steps In The Operation	**Key Points**
1. Trim the ragged edges of the injury leaving the hole or injury at least ¼ in. wide.	1. Trim the ends of all elongated injuries round.
2. Buff the edges of the injury lightly.	1. Buff off the surface edge of the injury so as to bevel the injury if it is too small to apply an inside reinforcement.
3. Buff inside of tube for a distance of ¾ in. around injury, if possible, and buff outside of tube 1 in. around injury in all directions.	
4. Wash all buffed surfaces with a clean cloth moistened with rubber solvent.	
5. Apply one light coat of quick vulcanizing cement to all buffed areas.	1. Permit cement to dry thoroughly.
6. Cut a piece of cured back or combination tube gum with rounded corners ½ in. larger in all directions than the injury.	1. Remove holland from the uncured side.
7. Holding the patch with uncured side up in long nosed pliers, dip in solvent and insert through the injury.	1. Hold patch clear of tube for a short time to permit solvent to evaporate.
8. Center patch as nearly as possible under injury, release pliers and press tube down on patch firmly.	1. Be careful not to distort injury.
9. Fill and pack injury level with outer surface of the tube with quick cure.	1. Stitch down thoroughly.
10. Cut one disc of quick cure tube gum ½ in. larger in all directions than the injury and another disc ¾ in. larger.	1. Remove holland cloth from the face of each disc and place back of small patch in center of face of large patch.
11. Center combined patch over the injury with small disc next to the tube.	1. Stitch down thoroughly. 2. Work tube to be sure the two inside walls are not stuck together from exposed cement on inside.
12. Clamp repair on holland covered hot plate.	1. Be sure tube lies smoothly and there is no fold within ½ in. of the edge of the pressure block.
13. Cure passenger tubes 8 to 10 min. Cure truck tubes 20 to 25 min.	1. Temperature—287 deg. and not to exceed 310 deg. Fahr.
14. Do not inflate tube until repaired area is thoroughly cooled.	1. Dip in cold water to speed cooling.

Job Breakdown Sheets . . .

(Continued from Page 69)

17. Repairing synthetic tire injuries smaller than ½ in.

18. Repairing synthetic tire injuries ½ in. and larger.

19. Replacing of tires, tubes, valves.

Step-by-step procedures of each of the operations is listed on a separate sheet of paper. Sets have been produced by a standard duplicating process so that they are available for all maintenance personnel. All sheets are 8½ x 11 in. in size. The information has been written in the simplest possible language so that even a novice can't go wrong. In effect, it constitutes a private maintenance manual. Now there is no excuse for poor work or time-wasting manuevers around the shop.

Approximately 7200 tires are required to keep Consolidated Freightways equipment rolling. This figure includes running wheels and spares plus a reserve to service and recondition their tires. At present, the OPA allows the company 7201 tires with 6078 in active service and 1123 tires for spares and service work.

JOB No. 19

Part: TIRE, TUBE, VALVES	Operation: REPLACING OF
Important Steps In The Operation	Key Points
1. Remove base nut and out side washer of injured valve.	1. If washer if frozen to tube, loosen by prying with screw driver.
2. Determine if injured valve has base cured in tube or not.	1. Valve with base cured in tube will not turn while one not cured in turns readily.
STEPS—Valve cured in tube. 3. Run base-nut thread di tool down until bottom of tool fits snugly against tube.	STEPS—Valve not cured in tube. 3. Push valve through valve hole into tube.
4. Cut off valve stem with hacksaw along top of tool and smooth off rough edges with file.	4. Remove valve from tube by slipping through a hole which may be in the tube or a very small hole cut for that purpose.
5. Remove die tool.	5. Insert a bare valve (without washer and base nut) through hole into tube. Wetting the rubber with rubber solvent allows valve to slip through a very small hole.
6. Screw on a REPAIR TYPE convertible valve.	6. Pull valve through valve hole until base of valve is snug against inside wall of tube and several threads are exposed outside.
7. Before tightening, wet tube surface around valve with water or rubber solvent.	7. Apply washer and base nut and tighten.
8. Be sure valve stem points to the side of the tube.	8. Repair hole in tube.
	9. CAUTION: Do not attempt to remove valve by pulling out through valve hole as this injures fabric valve base of tube.

Synchronized 5-Speed Spicer

Easy, passenger-car type shifting is now available for heavy-duty vehicles

AN IMPROVED line of fully synchronized heavy-duty transmissions for motor trucks, buses and other types of vehicles is announced by the Spicer Mfg. Co., Toledo, Ohio. Fleet operators now have available an easy shifting transmission, comparable to the shift of passenger cars and commercial vehicles, with the use of gear shift lever ratio which requires only slight hand pressure for engaging synchronized speeds. Speed equalization is then handled by the rugged synchonizers.

Although synchronized transmissions for heavy-duty vehicles thus become available for general installation for the first time, this does not imply that they are a novelty by any means. Spicer has been producing such units for the past 10 years for bus and truck use. Thousands were used in combat vehicles.

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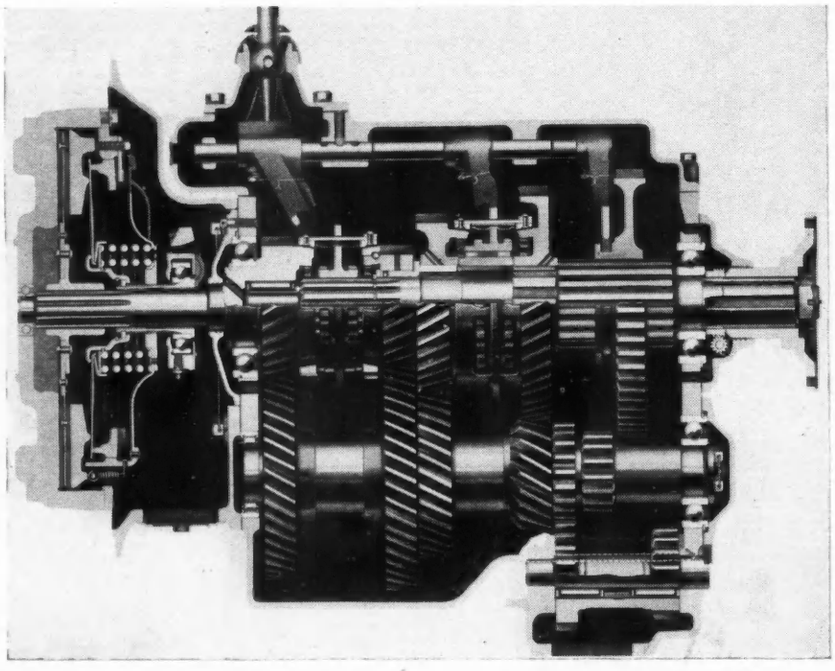

Cross-section view of the 5-speed synchronized transmission—Models 6252 and 6253. A blocker type synchronizer is used on 5th, 4th, 3rd, 2nd and overdrive

RECORDS of battery performance on thousands of trucks, of every size, in every type of service, supply convincing evidence to show that Exides give longer and better service . . . at less cost per mile of operation . . . and with maintenance costs that are practically nil.

The excellent performance of Exide Batteries in motor truck service is due to correct design, rugged construction, and high electrical efficiency . . . results of Exide engineering and manufacturing skill gained through long experience. When you buy an Exide you buy dependability, long-life and maximum economy.

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EXTRA DUTY BATTERIES

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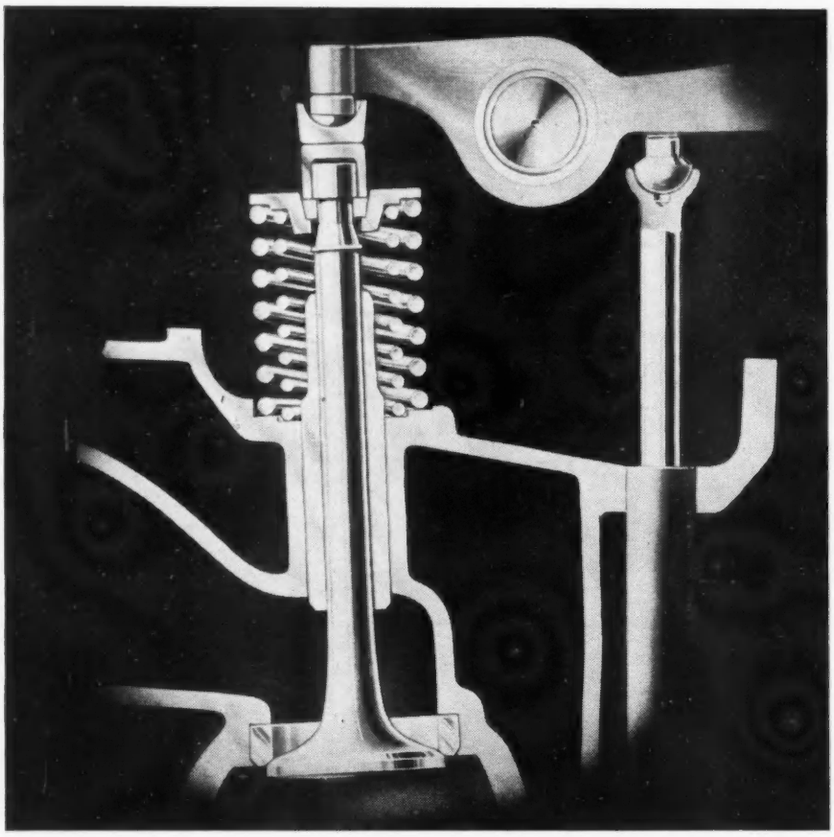


Cross-section view at the head showing valve linkage and Roto-Valve installation

Specifications of Three Models

Model Number	R-6513	R-6 72	R-6602
No. of cylinders	6	6	6
Bore	4½	4¾	4⅞
Stroke	5⅜	5⅜	5⅜
Displacement in cu. in.	513	572	602
Maximum r.p.m.	2600	2600	2600
Bare hp. governed r.p.m.	164	174.3	183.5
Maximum torque, ft. lb.	400	436	460
B.M.E.P.—maximum	117	115	115
Compression ratio for—			
70 octane gas	5.9-1	5.9-1	5.9-1
80 octane gas	5.9-1	6.5-1	6.2-1
No. main bearings	7	7	7
No. camshaft bearings	5	5	5
Piston length	5 15/16	5 15/16	5 15/16
Ring number	5	5	5
Wt.—Std. engine incl. flywheel housing and manifolds	1525	1525	1525
Wt.—Eqt. engine including accessories and air comp.	1705	1705	1705

New Continentals Have War-Tested Improvements

Feature seven main bearings, rotating exhaust valves, five-ring pistons, improved lubrication and cooling systems

ALTHOUGH the Continental Motors Corp., Model R-600 Series engines have been in production for a number of years, information on constructional details was not released during the war. Actually, these engines were used in heavy-duty vehicles in the war program and profited by improvements in design and in production techniques stemming from this experience.

The family of R-600 engines consists of a basic design of 6 cyl., overhead engine with a stroke of 5⅜ in., offered in three bores—4½, 4¾, and 4⅞ in. The models for use in motor trucks and buses are listed as R-6513, R-6572, and R-6602. Specification details for these models are given in the accompanying tabulation.

The basic engine features seven main bearings of replaceable type, steel-backed with a lead base babbitt lining over a sintered copper-nickel matrix—the Moraine Products Durex bearing. Lower con-rod bearings are of the same type. Crankshafts are drop-forged and carefully designed with important sections properly proportioned to give adequate rigidity. The crankshafts are Tocco-hardened to provide a hard bearing surface without destroying the tough structure of the load-carrying core. They are counterweighted, balanced statically and dynamically within ½ oz. in., and fitted with a torsional vibration dampener at the front end.

Cylinder block and crankcase are integral, heavily ribbed to prevent distortion and vibration, and made of alloy iron castings. properly normalized. Cylinder heads are of high compression, special anti-knock design, adapted for standard grades of fuels, and are of dual overhead valve type. They are securely held by 28 studs so arranged as to prevent distortion of bores.

(TURN TO PAGE 74, PLEASE)

NEW HALF-TON TRUCK ECONOMY!

Studebaker's popular Coupe Express Pick-up— for low-cost general utility use

THOUSANDS of truck users have been eagerly awaiting this good news from Studebaker. The popular Studebaker Coupe Express Pick-up will soon again be available!

Designed for utmost economy of gasoline, tires and maintenance, this brilliant-performing, half-ton Studebaker Coupe Express has good looks as well as high quality to recommend it.

From bumper to tail gate, it's a truck of many uses that's a credit to the great tradition of providing low-cost transportation which has been a Studebaker distinction since the business was established way back in 1852.

You get the same exceptional Studebaker engineering and craftsmanship in this Coupe Express that our government got in over a billion dollars' worth of Studebaker-built war equipment. In stand-up quality, this half-ton truck is a full-fledged team-mate of the more than 200,000 Studebaker military vehicles that served so brilliantly at the fighting fronts.

Demand is greater than supply right now. But the time is coming when everyone who wants a Studebaker truck can get one.

And remember, Studebaker has a one-ton pick-up, as well as this half-ton, on its truck production schedule —and 1½-ton models in several wheelbases, too.

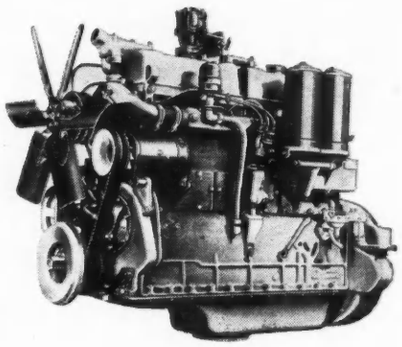
Studebaker

South Bend 27, Indiana, U. S. A.

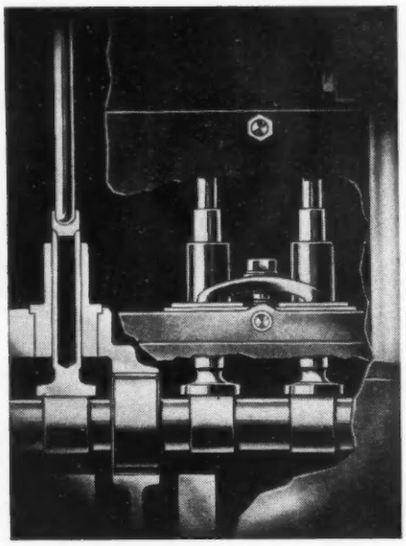
PIONEER AND PACEMAKER IN AUTOMOTIVE PROGRESS

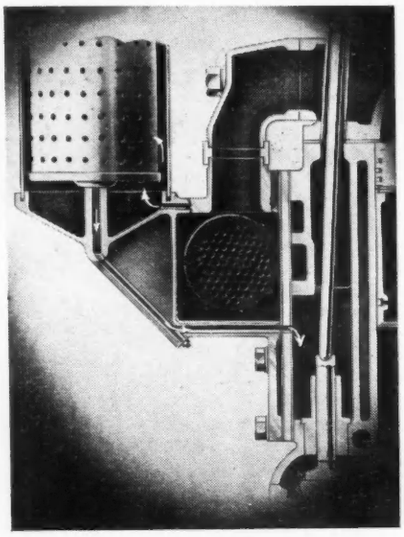
New Continentals . . .

(Continued from Page 72)



Below at left. Cut-away view showing removable tappet construction. Tappets can be removed and replaced through the tappet chamber by removing th crabs holding the bushings. Below at right. Cross-section view of top of cylinder showing installation of integral oil cooler and oil filter assembly. Arrows show direction of movement of oil around cooler. Above. Complete power plant with accessories

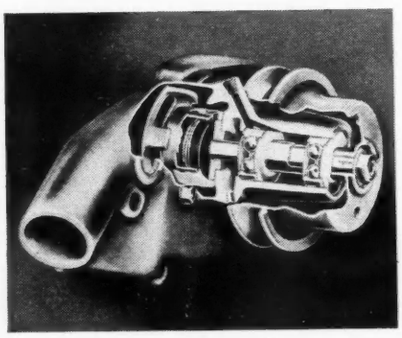




Rotating Exhaust Valve

THE VALVE system has a number of interesting features, including the use of a simple tappet construction which permits their ready removal and replacement through the tappet chamber by taking off the crabs holding the bushings. An outstanding feature is the use of the Thompson Products Roto-Valve mechanism on exhaust valves to prevent valve burning and the corrosion which may be caused in part by the use of highly leaded fuels. Rotation of the valve is accomplished by a special valve spring retainer and cap at the tip of the valve. In operation, the tappet in striking the cap lifts the retainer first, thus taking the spring load off the valve before lifting it. While the valve is in the lifted position it is free to rotate due to the natural vibration of the system. The Roto-Valve is standard equipment on truck and bus engines.

Exhaust and intake manifolds are available for either down-draft or up-draft carburetion with the standard feature of individual porting of the intake manifolds, to promote fuel economy and increased volumetric efficiency. This is achieved by diverting the fuel mixture into large individual passages leading to each cylinder. In addition, there is a hot-spot which has been developed to insure quick warm-up with maximum flexibility and minimum loss of power. The exhaust manifold has slip joints to prevent cracking under extreme variations of temperatures.



Cut-away view of the new water pump, showing widely spaced ball bearings

Cooling and Lurication Systems

FULL pressure lubrication to all main, con-rod, and camshaft bearings, as well as to the timing gears and rocker arms is provided at a pressure of 40 to 60 lb., by means of a large, submerged gear type oil pump driven off the camshaft and protected by a Float-O-Screen of ample size.

A large, integrally-mounted, tube-type oil cooler and an oil filter of 4-qt. capacity are standard equipment on all models.

Pistons are of aluminum alloy and held to close limits for size and weight. Ring set-up consists of three compression rings, an oil control ring, and an oil scraper ring, all mounted above the wrist pin. Wrist pins are full-floating and held in place by lock rings at each end.

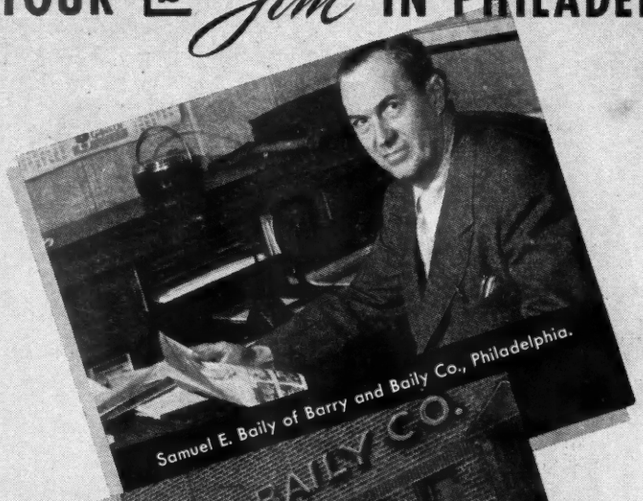
The cooling system incorporates a centrifugal pump of leak-proof design with the impeller mounted on two widely separated ball bearings. Coolant is directed, first, against the exhaust valve seats by means of an inlet header, then to other points in order of importance. Full length water jackets contribute to proper cooling of cylinder walls. The entire system can be automatically controlled by a thermostat and by-pass when specified.

Timing gears are of helical type with extra wide face, carefully cut to insure quietness. The oil pan is of pressed steel and has a capacity of 14 qt. Provision of road draft tube for crankcase ventilation is standard. The Donaldson valve installation is optional. Dry liners are offered as optional equipment on the Models R-6513 and R-6572.

YOUR Ls Jim* IN PHILADELPHIA, PENNSYLVANIA—

BARRY & BAILY CO.

Pioneers in Building Lightweight Bodies

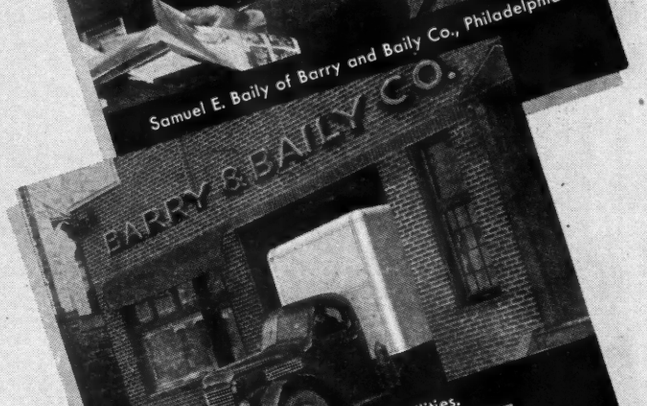


Samuel E. Baily of Barry and Baily Co., Philadelphia.

Samuel E. Baily and William J. Barry Jr. of Barry and Baily Company, designers and builders of truck bodies "since the days of the covered wagon," are your dependable "Ls Jims" in Philadelphia. Their long association and extensive facilities enable them to build Lindsay Structure bodies to your exact requirements with all the extra features available through Ls mass production.

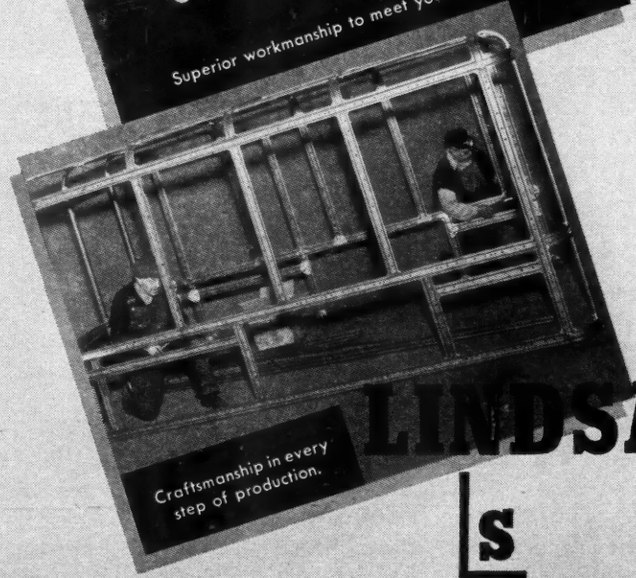
That is the advantage of the Ls plan. All over the country 162 "Ls Jims" are located where you need them for new Ls bodies or for service. And only in their Ls bodies can you get the combination of individualized design, all-metal construction, high strength-weight ratio, and quick repair features that mean increased hours on the road and reduced operating costs.

The Lindsay Corporation, Adams-Franklin Bldg., Chicago 6, Ill.; 60 E. 42nd St., New York 17, N. Y.; or Lindsay Structure (Canada) Ltd., Dominion Square Building, Montreal.



Adequate plant facilities.

Superior workmanship to meet your requirements.



Craftsmanship in every step of production.

Easy to assemble

There are 162 "Ls Jims" throughout the country. Do you know your local Ls dealer?

"Jim," a neighbor of yours, was chosen an Ls body builder because of his ability to handle your requirements intelligently — whether you need one or a thousand truck bodies.

Your "Jim" can design a body to meet your exact requirements. Make speedy deliveries and a quick factory repair job.

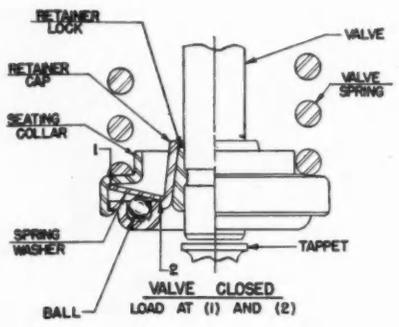
LINDSAY Ls STRUCTURE

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

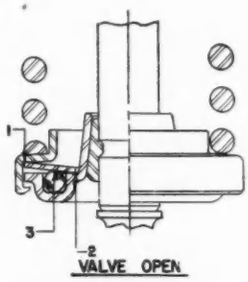
• • • DISTRIBUTORS AND DEALERS THROUGHOUT THE COUNTRY

Valve Rotating Cap Keeps Valve Seats Clean

New assembly helps fleets and engine makers to overcome valve sticking and blow-by

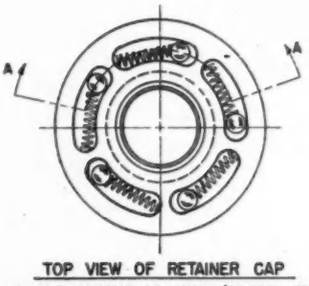


VALVE CLOSED
LOAD AT (1) AND (2)

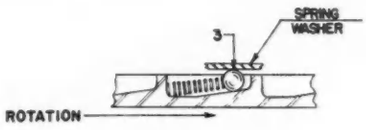


VALVE OPEN

INCREASE OF VALVE SPRING PRESSURE DEFLECTS SPRING WASHER TRANSFERRING LOAD FROM (2) TO (3) CAUSING BALL TO ROLL DOWN INCLINE SHOWN IN SECTION A–A



TOP VIEW OF RETAINER CAP
BALLS AND SPRINGS IN VALVE CLOSED POSITION



SECTION A–A
DEVELOPED THROUGH BALL PITCH DIAMETER

THE PRINCIPLE of engine valve rotation to prevent valve sticking has been discussed a great deal in recent years, the latest development—stemming from considerable research by Thompson Products, Cleveland, Ohio — being offered to engine builders and fleet operators in the form of the Thompson RotoCap. It is of interest that an earlier device called the Thompson RotoValve, introduced several years ago, did not give positive rotation and, in addition, required the machining of a special retainer lock and retainer neck on the valve stem. Consequently, it has been abandoned.

The RotoCap, resulting from later development, is produced in the form of a self-contained assembly (Fig. 1), gives positive controlled rotation, and is installed with the standard locks and retainer neck, the only change being in the spring retainer cap. The RotoCap, therefore, can be installed on any engine either by the manufacturer or by the vehicle operator simply by changing the spring retainer cap.

Slowly rotating valves are said to have many advantages. Valve sticking is eliminated to a great degree since deposits are continually cut from the stem by the rotating action. Block and valve seats are kept clean by the light lapping action resulting from the turning. Thus blow-by is less likely to occur, but should it occur due to distortion, the constant turning prevents the small portion of the valve at the point of blow-by from becoming excessively hot. Ninety per cent of exhaust valve failures are said to be due to sticking and blow-by.

Tests are said to prove that valves giving only 100 hours of service under severe conditions will give from 300 to 500 or more hours of service with the RotoCap under the same conditions.

The RotoCap is generally installed between the valve spring and the valve, replacing the conventional spring retainer cap. It consists of five parts, shown in Fig. 2. The retainer cap, which is locked to the valve stem by conventional retainer locks, contains several circular, helical races. These races contain balls which are continually forced to the shallow ends of the races by small springs. A seating collar furnishes the seat for the valve spring and is spun over the retainer cap to form the single compact assembly. Interposed between the seating collar and the retainer cap is a conical spring washer having sufficient resistance so that the load of the valve spring, with the valve closed, produces only a small deflection. This load is carried from the seating collar to the outer edge of the washer at (1) to the inner edge and to the retainer cap at (2).

When the valve is lifted, the valve spring load increases, thus deflecting the washer more and tending to flatten it. The balls, which have been forced up under the washer by the small springs then pick up this load at (3), and as the washer continues to flatten, they roll down their respective races a few thousandths of an inch. Inasmuch as the flattened washer is riding on the balls at this time, rotation of the retainer cap and stem, relative to the washer, and other stationary parts is thus produced. When the valve is again closed, the valve spring load is reduced and the spring washer assumes its original position.

This gives a controlled amount of rotation for each lift of the valve, and although it is not great, it is said to be sufficient to produce the desired results. Controlled rotation is important, since too little is of doubtful value while too much causes rapid valve wear.

3000 TRAILER LOADS OF PERISHABLES A YEAR *without a Single Claim...*

THAT'S THE RECORD OF THE *FRUEHAUF REFRIGERATOR VANS* IN THE FLEET OF *VICTOR LYNN!*

Trail-Aire Conditioner
Provides Perfect Protection for Perishables in Any Climate

Trail-Aire is a true air conditioner—supplying heating or cooling as needed. A simple control provides instant change from one to the other.

Send for folder on **"TRAIL-AIRE CONDITIONER"**

Victor Lynn Lines, Inc., employ a fleet of 21 Fruehauf Refrigerator Vans to transport chickens, ice cream and frozen foods to northern markets from processing plants along the Eastern Seaboard.

C. M. Hogarth, Executive Vice President, writes: "With our 21 Fruehauf Refrigerator Vans we move an average of 10 loads a day of frozen foods and other perishables. These Trailers are so well insulated that throughout the entire year we did not have one load rejected because of improper temperature, nor did we have any claim on this type of freight for any reason whatever."

Mr. Hogarth continues: "We definitely feel that there is a big future in the transportation of frozen foods and while we are continuing to haul general merchandise we are nevertheless specializing in the frozen foods end of our business. We are adding an additional eight Fruehauf Refrigerator Vans to our fleet this year."

No question about it. The transportation of frozen foods does offer a tremendous opportunity to motor transport. But that opportunity exists only for those who are properly equipped to handle the job.

Before you buy a Refrigerator Van, take a tip from Victor Lynn's experience. Ask your Fruehauf Branch for complete information on insulated Trailers and the new Trail-Aire Conditioner.

World's Largest Builders of Truck-Trailers

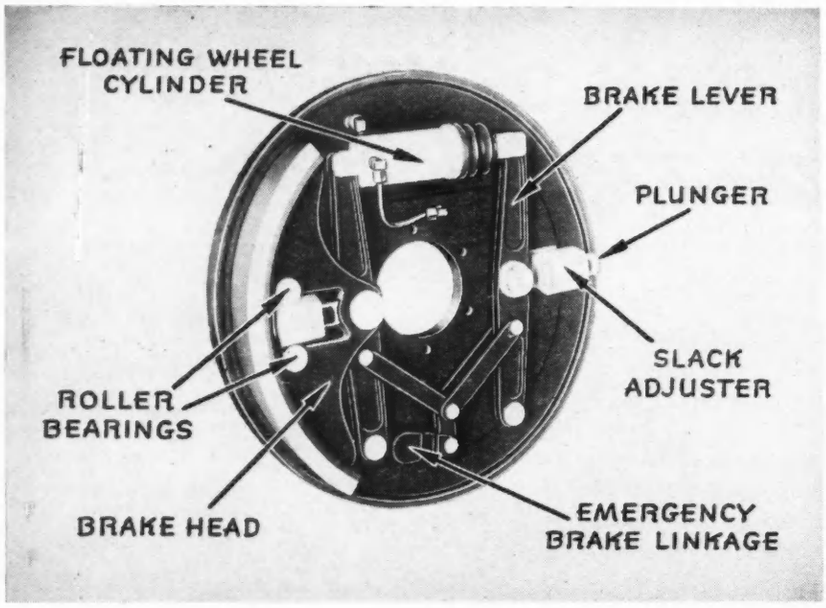
FRUEHAUF TRAILER CO. • DETROIT 32

8 Factories—60 Factory Service Branches

THIS STORY IS AMERICA—
WHERE YOU ARE FREE TO GET AHEAD.
LET'S KEEP IT THAT WAY!

FRUEHAUF TRAILERS

"ENGINEERED TRANSPORTATION"
REG. U. S. PAT. OFF.



Self-Adjustment Features New Hydraulic Brake

Unusual design has no master cylinder or booster; is balanced and non-self-energizing

A NEW brake developed by the Universal Slack Adjuster Co., Camden, N. J., is a combination hydraulic power brake and a manually operated emergency brake. It is a non-self-energizing type of brake, balanced and self-adjusting.

The brake is operated by a hydraulic system which does not require any master cylinder or boosters. The system includes a hydraulic control valve of the company's own design, which is operated by a foot pedal having a ¾-in. movement.

A wheel cylinder of the company's own design is used. It is a floating cylinder which is mounted on the brake levers, thus permitting the use of a larger diameter cylinder, having more piston displacement. This also permits of the use of brake levers with increased leverage ratio. Therefore, a high line pressure is unnecessary to create the required braking power.

By reason of the fact that this brake is non-self-energizing, self-adjusting and balanced, with both brake heads doing the same amount of work, the life of the linings is said to be increased by as much as 50 per cent.

The self-adjusting feature of the brake is accomplished by the automatic slack adjusters, which are fixed to the backing plate. These slack adjusters have tapered plungers, which are slideally mounted in the housing with the large end toward the brake drum. The plungers are equipped with frictional faces within the housings and are under spring pressure. These plungers have a greater resistance than that created by the brake release spring, located in the wheel cylinder, and act as a brake head stop when the brakes are released. The plungers are .015 in. shorter than the opening in the brake head, allowing the brake head to move this distance from release to application position without disturbing the plungers.

When the brakes are applied and wear takes place, either in the lining or brake drum, the brake heads will move into a new position. After this adjustment has taken place and the brakes are released, the heads will be stopped by the plungers in a new release position, at the same time maintaining the same clearance as stated above. This will occur regardless of the amount of wear.

The balanced and non-self-energizing feature of the brake are obtained by the manner in which the brake heads are mounted. The inner ends of the brake heads are pivotally mounted on the brake levers. The brake heads are equipped with roller bearings at the outer ends. These roller bearings move back and forth on guides which are formed at the top and bottom of the automatic slack adjuster housings and form the supports for the brake heads. All brake pressures are exerted along the center line of the heads and will eliminate any tendency of the brake heads to self-energize when the brakes are applied, regardless of the direction of rotation.

This method of mounting the brake heads and the manner of the application of pressure on the heads causes both heads to create the same amount of braking power, thereby producing a balanced brake.

This new brake is so designed that the brake heads can be removed by simply removing the retaining ring at the brake lever connection and moving the brake lever into the released position. The brake head roller bearings will then clear the guides, and the head can be removed for relining of the shoes.

Trailer built by Rogers Bros. Corp

$12,000 worth of tires for one 30-mile trip

A typical example of B. F. Goodrich development in tires

ARMY engineers wanted a secret load moved to the middle of a western desert. It weighed 230 tons. Time was all-important. How to get it there? Build a railroad? That was costly and slow. Move it by truck? No truck or trailer ever built would carry this load.

It was decided to design and build a huge trailer — if tires could be found to carry the load. And the trailer had to be built in 30 days. Engineers came to B. F. Goodrich with their tire problem — found just what they were looking for. B. F. Goodrich built special truck tires based on the desert tire principle developed previously by the company. These are wide-bottomed tires that don't sink into soft sand. Tires that can carry a terrific load.

Sixty-four big B. F. Goodrich tires, each weighing 220 pounds, were mounted on the trailer — eight rows of tires, eight in each row. The trailer was more than 39 feet long, nearly 17 feet wide, and weighed 73 tons. It was built to carry a total load of 300 tons — the heaviest load ever hauled on pneumatic tires.

Army tanks pushed and pulled the loaded trailer from the railroad siding to the desert. The load arrived safely and on schedule. Twelve thousand dollars' worth of tires, still usable but made primarily for this one trip that may have shortened the war.

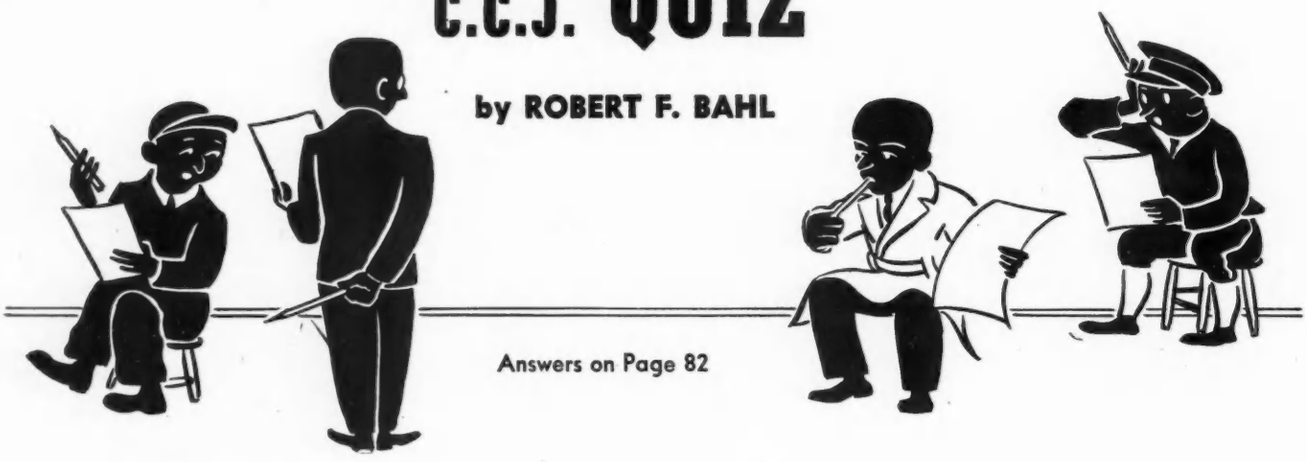
This example of B. F. Goodrich ability to meet an unusual transportation problem is typical of the research and development carried on constantly by the company. Research which means better tires for trucks, cars, airplanes, farm vehicles, and industrial equipment. *The B. F. Goodrich Co., Akron, O.*

Truck Tires BY

B. F. Goodrich

C.C.J. QUIZ

by ROBERT F. BAHL



Answers on Page 82

Middle initials are intriguing. They're always standing there, but what do they stand for? We're going to give you ten of the leading lights in the automotive industry and ask you to guess the middle name of each one. Just so it won't be too tough, we'll let you have at least one clue for each. 70 is fair; 80, good; 90, wonderful; 100, stupendous. You'll find the correct answer on page 82.

1.

What is the "F" for in Charles F. Kettering? Here's a hint—a fellow of this name held his job longer than anyone else in history. The name is ————.

2.

The middle name of Robert P. Page, Jr., of Autocar, is one that is associated with the "The Thin Man." The name is ————.

3.

The "T" in Diamond T stands for C. A. Tilt. Now can you tell us what the "A" stands for in Mr. Tilt's name. Your clue—a king of this name was famous for his Round Table. The name is ————.

4.

Sound your "A" again. This time it's the "A" in Walter A. Olen, founder and president of the Four-Wheel-Drive Auto Co. And your clue—it was the first name of the Happy Warrior. The name is ————.

5.

Half of the Kaiser-Frazer team is Joseph W. Frazer. The "W" represents a famous father who had no children. The name is ————.

6.

Next on our list is Arthur W. Herrington of Marmon - Herrington. The "W" should pose no difficulty if you can "Tell" us who it was that shot an apple off his son's head with bow and arrow. The name is ———.

C.C.J. QUIZ Score Card

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....
8. .....
9. .....
10. .....

Total Score ____

7.

Color-blind readers will be excused if they miss this one. You have to give the meaning of the "G" in Paul G. Hoffman. The name is ————.

8.

Charles E. Sorenson's parents certainly named him appropriately, because the initial "E" stands for a middle name that is derived from a Latin word meaning "industrious." The name is ————.

9.

Your professor's initials are R. F. B., just the same as those of R. F. Black, president of White Motor Co. The "F" in our name stands for Francis. Tell us, does the "F" in Mr. Black's name mean the same thing? Yes or No?

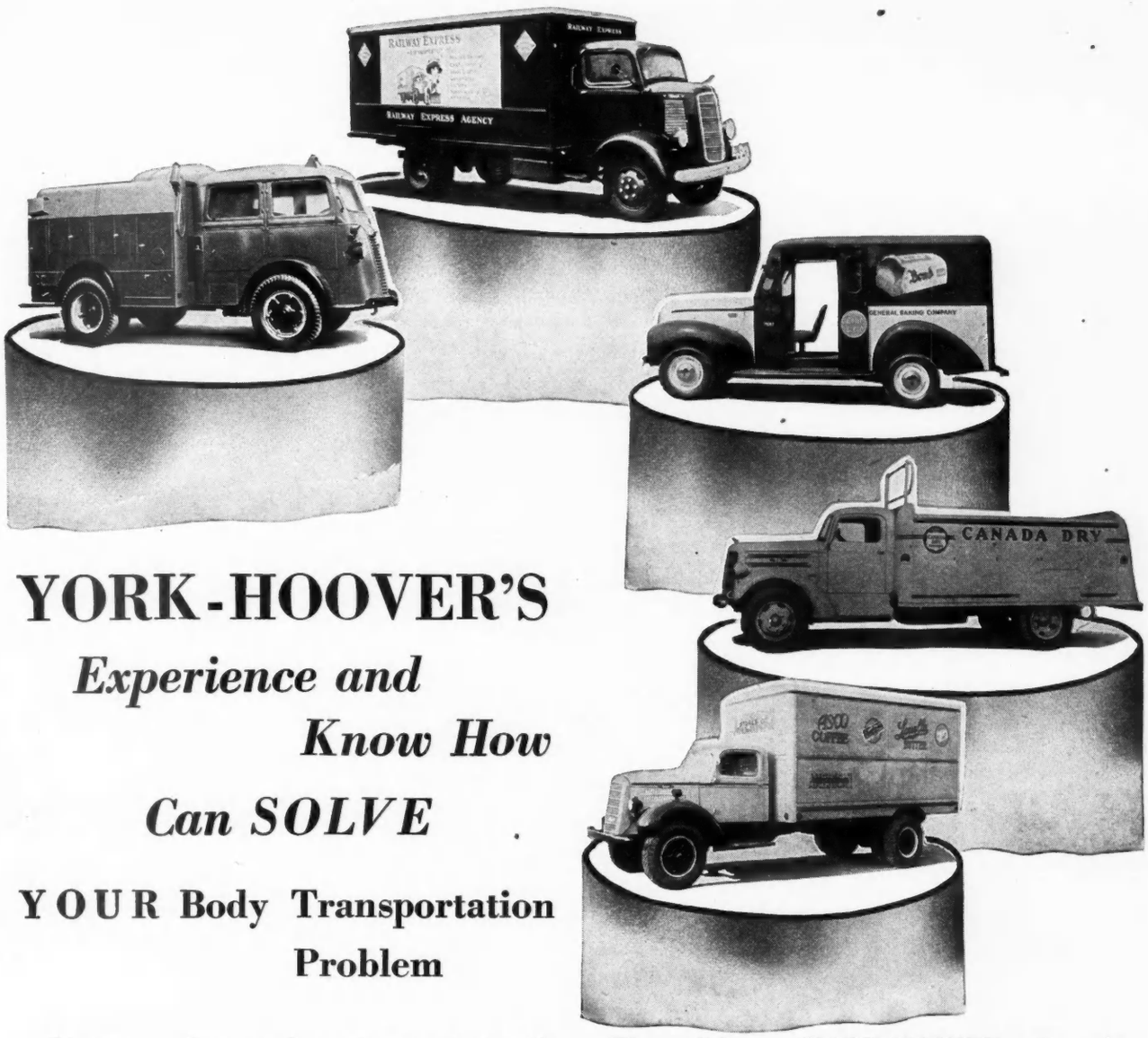
10.

Charles E. Wilson is an executive in three big companies—General Motors, General Electric, and Worthington Pump and Machinery Co.—but he happens to be three different persons. If you mean the president of General Motors, you had better be specific and say—

a. Charles Edward Wilson

b. Charles Erwin Wilson

c. Charles Eben Wilson



YORK-HOOVER'S

Experience and Know How Can SOLVE

YOUR Body Transportation Problem

54 years and more of constant contact with the transportation industry—solving Body problems—all kinds—day in and day out, is an experience we will gladly share with you.

Add to this wealth of experience the most modern facilities for Body construction and production and there is just one more factor to add:

The well known YORK-HOOVER policy of Quality—your final assurance of low "per package" delivery cost.

We are anxious to offer all or any part of our facilities to accomplish for you what we have succeeded in doing for others.

Be "Body-Wise" Consult York-Hoover—NOW!

ARMY E NAVY

YORK-HOOVER CORPORATION

BODY DIVISION **YORK, PENNSYLVANIA**

Bonded Brake Linings for Dodge ½-ton

BONDED brake linings with increased braking area which give longer lining life and smoother stops than the conventional rivet linings have been announced as standard equipment on the half-ton series of Dodge trucks.

Brake linings on the half-ton truck models are being bonded to the shoes by the Cycle-Weld process. The Cycle-Welded brake linings can be worn down almost to the steel shoes before they need replacing. This gives greatly-increased life and practically eliminates any brake chatter or squeal.

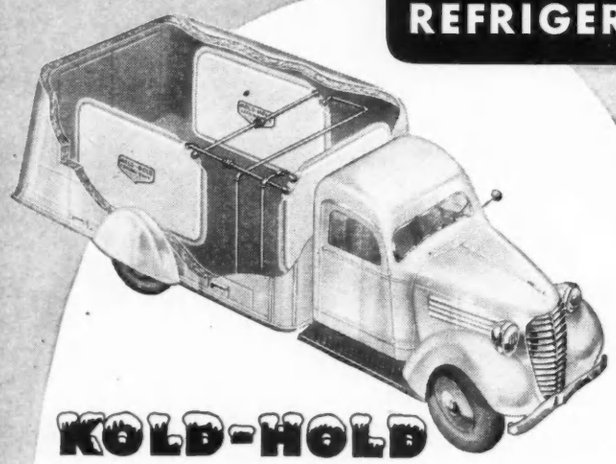
Cycle-Welding was developed by S. Gordon Saunders, research expert of Chrysler Corp., and it derived its name from the fact that it requires a cycle of pressure and heat to produce a weld or bond.

In the process of applying the new lining, the outer surface of the brake shoe is sand-blasted to remove scale. This provides a better surface for adherence of the Cycle-Weld cement. Then the Cycle-Weld cement is sprayed on the steel shoe. After drying slightly, the lining is applied and the metal shoe, with lining attached, is placed in a clamping fixture.

It remains in the metal fixture while the adhesive is dried in an oven at 350 deg. Fahr. Then the clamping fixture is removed and the bonded lining and brake shoe are ready for use.

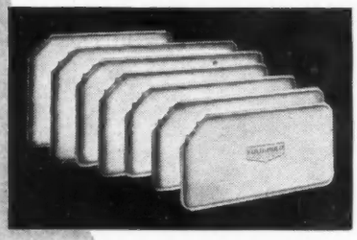
Chrysler laboratory and road tests have revealed that Cycle-Welded linings withstand temperature and other conditions to which brake linings are subjected.

PROTECT YOUR MERCHANDISE WITH PRACTICAL REFRIGERATION



KOLD-HOLD

Preserve the true flavor and high quality of your product by delivering frosted foods and other perishable items as fresh and attractive as when packaged. KOLD-HOLD Streamlined "Hold-Over" truck plates protect your product in transit . . . enable you to make more deliveries with less waste and spoilage . . . keep the interior of your truck dry and odorless.



These plates are engineered and constructed to give complete satisfaction and efficient service . . . guaranteed ten years. Free estimate of your requirements upon request.

KOLD-HOLD MANUFACTURING CO.
620 N. Grand Avenue
LANSING 4, MICHIGAN

QUIZ ANSWERS

CCJ Quiz on Page 80

1. Charles Franklin Kettering, research director of General Motors. The clue referred to Franklin D. Roosevelt, who was President for three terms and part of a fourth.

2. Powel, with just one "l". This spelling is very seldom used, but it is the label of an old and distinguished family. ("The Thin Man" of movie fame is William Powell.)

3. Arthur. The full name is Charles Arthur Tilt, for 40 years he was president and active head of Diamond T. Now he is its Board Chairman. (Of course, you recall King Arthur and his Knights of the Round Table.)

4. Alfred, and the reference of course is to Alfred E. Smith.

5. Washington, George Washington, the father of his country, had no children of his own.

6. William. And surely you knew we meant William Tell.

7. Paul Gray Hoffman, president of the Studebaker Corp.

8. Charles Emil Sorenson, now head of Willys-Overland Motors, Inc.

9. No. It's Robert Fager Black.

10. b. Charles Erwin Wilson is president of General Motors. Charles Edward Wilson is head of General Electric, and Charles Eben Wilson is vice-president of Worthington Pump and Machinery Co.

VALVOLINE FLEET LABORATORY SERVICE

tells you positively--accurately whether or not you are using

THE RIGHT GRADE MOTOR OIL--THE CORRECT DRAINAGE PERIOD

There's one sure way to find out whether you're getting efficient lubrication in your truck or bus fleet—have a step-by-step chemical analysis of crankcase drainings made by the Valvoline Fleet Laboratory Service.

Many users of Valvoline are increasing operating efficiency and decreasing maintenance costs by having this regular analysis made. It gives an accurate checkup on operating conditions based on actual analysis facts and figures and translated into simple, practical recommendations.

Even though you are using the correct grade of motor oil, such a test might reveal hidden causes of excessive engine wear and breakdowns caused by improper driving or other conditions.

• • •

5,000 miles of grueling service in a bus—that's a lot to ask of any motor oil. Yet crankcase drainings of Valvoline, taken from two buses were tested and found normal on every count. They were still giving efficient lubrication—after this performance! (Case History C-2554—name on request.)

And incidentally, the buses of this fleet run a total of 16,000,000 miles a year—on Valvoline! The reason this fleet can go beyond 5,000 miles in these units on Valvoline is because our Fleet Laboratory Service determined the condition of the oil at that mileage. Get out of trouble—*stay* out of trouble with Valvoline!

Write, phone or wire your nearest Freedom-Valvoline branch <u>today</u>!

VALVOLINE

THE ORIGINAL PENNSYLVANIA MOTOR OIL
COSTS MORE TO MAKE — COSTS LESS TO USE

FREEDOM-VALVOLINE OIL COMPANY

431 Main Street, Dept. 41-C Cincinnati 2, Ohio
New York - Washington - Toronto - Pittsburgh
Atlanta - Detroit - Chicago - Los Angeles - Vancouver, B. C.
Refineries at Butler and Freedom, Pennsylvania

WASHINGTON RUNAROUND

Door Open for New Rates . . . Tires Will Meet '46 Goals . . . Better Tires by Summer . . . Truck Production Picture . . . Trailer Makers Mum . . . ICC First-Aid Conscious . . . '46 Highway Program Lags . . . Congressional Capers . . . Surplus Truck Stocks Short . . . etc.

by GENE HARDY
CCJ Washington Bureau

YANKEE YANKEE YANKEE YANKEE YANKEE
MIRROR MAGIC?
NO! NOT WHEN YOU KNOW HOW!
Feats of magic always require consummate skill—painstaking attention to details—years of experience.
Making YANKEE Automotive MIRRORS requires the same magical skill—the same perfecting details—born of more than a quarter of a century of experience. It's therefore no mere accident that YANKEE MIRRORS provide high fidelity vision — without tricky illusions — without distortion. No wonder YANKEE MIRRORS have always been the finest in the world — the finest that money can buy!
NO. 241 REPLACEMENT MIRROR HEAD. Made to fit the No. 245 Telescopic Adjustable Mirror
NO. 245 TELESCOPIC ADJUSTABLE MIRROR. Adjustable to any position. For Universal mounting on Trucks & Buses
YOU'RE SAFE WHEN YOU CAN SEE with
TRADE MARK
YANKEE
REG. U. S. PAT. OFF.
You'll always find them packed in the familiar Red, Yellow and Blue package.
TRAILER AND TRUCK MIRROR
ASK YOUR JOBBER SALESMAN
REFLECTORS
DIRECTIONAL SIGNALS
CLEARANCE LAMPS
CONVERSION KITS
YANKEE METAL PRODUCTS CORP., NORWALK, CONNECTICUT, U. S. A.

Door Open for New Rates

Fortunately, the impact of the steel strike on production of items used in the trucking field was not as severe at it would have been had the strike continued for another week. Its most important effect was embodied in the Presidential order setting a new wage and price policy for the national economy. In its broadest sense it means a higher national wage level and an eventual higher price level, although for the present OPA will strive to hold price increases to the metal-using industries.

The stabilization order as it now stands applies primarily to manufacturing industries and excludes much of the economy. But the segments of the economy outside the scope of the order—service trades, the trucking industry, utilities, etc.—particularly those whose rates are fixed by regulatory bodies, will as a natural consequence expect higher wages. The net result will mean increased pressure on the ICC and OPA for increased rates.

An indication of what might be expected in trucking was held out recently when the National Wage Stabilization Board, successor to the War Labor Board, in its first trucking case decided that increased wages paid by 48 trucking companies may be used as a basis for increased freight rates by the ICC and OPA.

The increased compensation in question was in lieu of overtime rates and the importance of the decision was in the point made by NWSB that such increases need not be considered as part of average straight-time hourly earnings in computing the cost-of-living wage formula.

The truck pricing order has also been held up pending further clarification of the new wage-price policy and the detailed application by OPA of the $5 per ton steel price increase. Since OPA has not changed its pric-

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WASHINGTON RUNAROUND

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ing standards it is not likely that there will be much change in the truck pricing formula, despite the fact that the order is being rewritten, unless the truck producers' earnings do not reflect average 1936-39 profits in relation to net worth.

Tires Will Meet '46 Goals

Production-wise, the steel strike raised several interesting problems. Tire production escaped disaster by the skin of its teeth. In addition to the steel strike, this situation was complicated by a strike in the plants producing the tire industry's steel bead wire. This strike was settled on Feb. 11, and at that time there was a little less than 30 days supply of steel rod and wire on hand to be turned into tire bead wire. When this strike ended the tire producers had enough bead wire on hand for two days' production.

The steel strike ended on Feb. 18, and CPA says that it looks as though tire producers will be able to keep up their record output, although the bead wire situation will be on a hand-to-mouth basis for several weeks.

CPA and industry sources both report that tire production is proceeding according to plan. Both truck and passenger car tire production reached a rate of production in February which will enable the industry to meet its 1946 goals of 13,270,000 truck and bus tires and 66,000,000 passenger car tires, provided there are no major strikes in the industry for the remainder of the year.

Better Tires by Summer

In addition, better quality truck and bus tires are on the way. By the time this issue of CCJ reaches its readers CPA will have amended the rubber order providing for an increase of natural rubber for truck and bus tires. This action on the part of CPA is designed to provide the best quality tires available for summer use, when wear is greatest. However, the better quality tires will not be available in quantity for some time, and it would not be advisable to hold off buying tires from present stocks. No natural rubber is permitted in passenger car tires, except 2 oz. per tire in the cement. This was raised from 1 oz. per tire on Feb. 1.

Truck Production Picture

In trucks the situation is slightly different. The steel strike coupled with a parts shortage that is approaching the critical stage has caused CPA to revise the original estimate of 62,000 units in February to a possible maximum of about 40,000. The original estimate for March was 70,000 units, but this has been revised downward to about 60,000. The ending of the GM strike would almost assure a 60,000 unit output in March. On Feb. 21 CPA estimated that the steel strike will adversely affect steel deliveries to producers for five to six weeks.

Component suppliers had practically used up their steel stocks when the strike ended. However, parts production is expected to increase as a result of the OPA suspension of price

(TURN TO NEXT PAGE, PLEASE)

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Complete with specifications for all models —Cars, Trucks, Tractors and Farm Light Plants.

Knock-Out Valve Seat Rings are individually cast of close grained, hard, gray iron. The accuracy with which they are made and ground insures concentric walls and correct bevel for driving. • K-O Rings will wear longer than the original valve seat because they are made of better and more uniform metal than that of the cylinder block. • Knock-Out Rings are stocked by most automotive parts jobbers.

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Kindly send me ( ) copies of your new VALVE SEAT RING DATA BOOK

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WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 87)

ceilings on original equipment truck parts, which is expected on or about March 15.

It is generally estimated that the steel strike, which caused a loss in production of 6,000,000 tons, threw the reconversion truck schedule back a full month.

Industry sources report to CPA that everything is set for full-scale production dependent only on the availability of components and the clearing up of labor difficulties.

In January total truck production of 54,684 units met manufacturers forecasts for the first time since all restrictions on production were removed. This increase, despite the complete shutdown of GM and only partial operation by Dodge and other producers, offers a preview of what may be expected when the industry hits its full production stride.

January production was composed of 24,557 lights, 23,956 mediums, 3756 light-heavies, and 1678 heavy-heavies—plus 917 light-heavies on military orders, of which 800 were for shipment to China.

Trailer Makers Mum

Trailer production was also hit by the steel strike, but the loss cannot be estimated in number of units. Since CPA turned the reporting job over to the Census Bureau last fall, Census has little or no cooperation from trailer manufacturers. Therefore, no accurate information is available in Washington on past production or future estimates. It is reported that CPA has asked the Budget Bureau for authority to get up a new form which would again require mandatory reporting of production on the part of the trailer producers, as was done throughout the war. The tire situation has cleared up considerably, and trailer producers report that they are not experiencing as much difficulty with parts.

ICC First-Aid Conscious

Public hearings on revisions in the ICC Motor Carrier Safety Regulations will not be held for at least six months. While the ICC is fully occupied on more pressing matters, the regulations are being revised and progress is being made. After the ICC completes its original revisions, conferences will be held with all interested parties on the various parts of the regulations. Then another draft will be prepared incorporating changes suggested by the conferees. When this revision is completed, hearings will be held.

One possible change might require the carrying of first-aid kits by truckers. Recently, the ICC changed its regulations permitting buses to carry non-metallic first-aid kits of the type substituted during the war. The new regulation sets up exacting specifications and also specifies a minimum quantity of materials to be contained in the kits. In general, the new order is more definite in character and does not allow the leeway permitted in the original regulations.

Congressional Capers

The House Rules Committee on Feb. 20 cleared the resolution calling for an investigation of the Trans-

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BRAKE LINING PROBLEMS?

Come to GRIZZLY

REG. U. S. PAT. OFF.

Thirty years experience in the manufacture of brake lining has provided Grizzly with a priceless background for solving brake lining problems. The solutions to countless problems of widely divergent natures have come about through Grizzly research and constant alertness to new developments in the brake lining field.

Fleet owners, service managers and truck operators recognize the economy of Grizzly's lower cost per mile of service—acknowledge Grizzly's ease of installation and astonishing freedom from adjustment — appreciate Grizzly's smoother, quicker stops.

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BRAKE LINING

The only dependable, economical answer to top ring groove wear...

SEALED POWER GI-60

MAKES OLD PISTONS NEW — KEEPS NEW PISTONS YOUNG

ALL good mechanics know that worn top ring grooves will put two strikes on the best piston rings ever made. A new ring installed in a worn top groove permits gases to blow by, causing short ring life, cylinder wear, and excessive gas waste. If you widen the groove and put in a wider ring, you are changing the original specifications of the engine manufacturer and inviting trouble. If you put in an ordinary spacer, you have merely put in a wider ring in two sections.

The new Sealed Power GI-60 Contracting Groove Insert is not a "spacer." It does not float, but is anchored securely at the top of the ring groove. Before the GI-60 is installed, the top groove is re-grooved to an absolutely true surface 1/32" wider than the original groove, with a 1/32" recess at the top. Into this recess the GI-60 Groove Insert is fitted, locking itself permanently in place, forming a heat-treated spring-steel shield that resists wear and pounding of the top land better than either aluminum or cast iron can resist it.

Your Sealed Power jobber is now equipped to furnish this service for you. It is the only dependable, economical answer to top ring groove wear. It is equally effective in worn or new replacement pistons. The cost is low and the benefits are great. Thorough field tests by commercial fleets have proved the efficiency and value of GI-60 beyond any doubt. Ask your jobber now for this new Sealed Power service.

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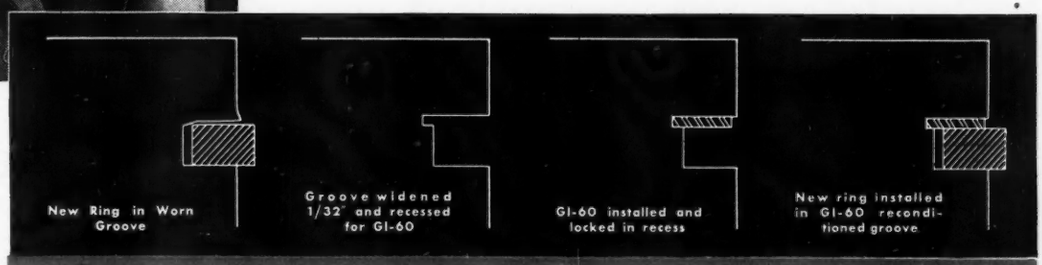

New Ring in Worn Groove
Groove widened 1/32" and recessed for GI-60
GI-60 installed and locked in recess
New ring installed in GI-60 reconditioned groove

SEALED POWER PISTON RINGS

BEST IN NEW TRUCKS! ★ BEST IN OLD TRUCKS!

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 88)

portation system by the House Interstate and Foreign Commerce Committee headed by Clarence F. Lea, Dem., Calif. The resolution must still be cleared by the House. Chairman Lea has been going ahead with his investigation since last fall, despite the lack of Congressional approval. His Committee staff reports that from 600 to 800 replies have been received in response to the questionnaires that have been mailed. They maintain that the replies represent a good cross-section of the many transportation fields on a geographical basis. . . . Public hearings on the House-approved Bulwinkle bill were scheduled to begin about March 7 before the Senate Interstate Commerce Committee. This bill would place carriers' rate bureaus under ICC supervision and would remove them from the threat of prosecution under the anti-trust laws. . . . While hearings on the Hobbs anti-racketeering bill were not scheduled by the Senate Judiciary Committee as CCJ went to press, there were strong rumors that the Committee would approve the legislation with only perfunctory hearings. House supporters are strong in their belief that the bill will get Senate approval.

Surplus Truck Stocks Short

Declarations of surplus trucks are about at an end. Sales have climbed since Jan. 1, and it is estimated that about 150,000 trucks of all types have been sold. The remaining supply is estimated at approximately 50,000, and a majority of these are 2½-ton units.

With the Army almost out of trucks it is doubtful whether surplus vehicles represent any threat to established dealers. The size and mechanical specifications is another important reason. Another is the fact that veterans and priority claimants have taken a large proportion of the available surplus.

Most important is the fact that more than 54 per cent of trucks available to surplus buyers require repairs before use, another 6.8 per cent are not usable as vehicles, and only 6.1 per cent are new.

The situation is almost identical in surplus tires. Acquisitions of truck tires amount to about 345,000 new and used tires, with priority claimants taking most of the new tires. Passenger car tire acquisitions totaled 25,000 new tires. Very few of these reached commercial channels.

No Count on Surplus Parts

The War Assets Corporation, now in charge of practically all surplus property, does not know how many new parts it has, or how many have been sold. This is largely due to the cumbersome sales procedure which involved Army Ordnance as a middleman. However, an inventory was started on Feb. 15. Many estimates have been made on the total quantity available, perhaps the best of these sets the value at $150,000,000. Meanwhile, large quantities of used parts, accessories, and assemblies are being sold directly by War Assets. Sales are on a one discount basis—90 per cent off manufacturers' list prices F.O.B. shipping point.

THE EVOLUTION OF AN OUTSTANDING TRADEMARK IN THE AUTOMOTIVE INDUSTRY

★

Thirty years ago the famous "Boy and Bull" identified the best known and most universally used shock absorber in America. Years later advanced engineering evolved the hydraulic shock absorber to supplant the snubber as a means of ride control and chassis protection. And now, as then, the Gabriel trademark takes preference among motorists and all who operate motor equipment, whenever and wherever shock absorbers are concerned. It's good business to equip with Gabriels.

THE GABRIEL COMPANY
1407 EAST 40th ST. ★ CLEVELAND 14, OHIO

★ ★ ★ ★ ★ ★ ★ ★ ★

TRUCK SPECIFICATIONS TABLE

OF 1946 PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

KEY TO DEFINITIONS, REFERENCES AND ABBREVIATIONS

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.
(1) Chevrolet exceptions to definitions.

LIST PRICE

This is the list price of the basic vehicle. It does not include the additional charge as authorized by OPA for synthetic tires delivered after April 18, 1944. Models CK-OR-OS equipped with four and all other models equipped with six, normally standard size tires.

OPTIONAL UNITS

Chevrolet own rear axle (5.43:1) available at extra cost on models OR, OS and OW.

Chevrolet own 2-speed rear axle (5.64-8.22) available at extra cost on models OH, OI, OJ, OE, OF.

CHASSIS WEIGHT

Includes the weight of the cab on all c.o.e. models (OH-OI-OJ).

GROSS VEHICLE WEIGHT

With maximum tire equipment (at extra cost).

STANDARD TIRE SIZE

Refer to exceptions to chassis list price.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of our engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Eaton Two-Speed Axle designated KS Models.

(b) Current models will include, at additional cost, certain items not considered standard equipment. These items are included in the specifications and are listed below—Model K-3, oversize transmission; Model K-6, K-7 and K-6-F, oversize brakes; Model K-8, oversize engines and brakes; Model K-10, oversize engine, transmission and brakes; Model KR-11, oversize engine and transmission; Models K-8F and K-11-F, oversize engine and brakes.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.
WW—Westinghouse or Wagner

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.

GOVERNOR STANDARD

Y—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
$—Semi-Floating
T—Torque Tube

Gear Ratios

(**) Only one ratio.

Drive and Torque

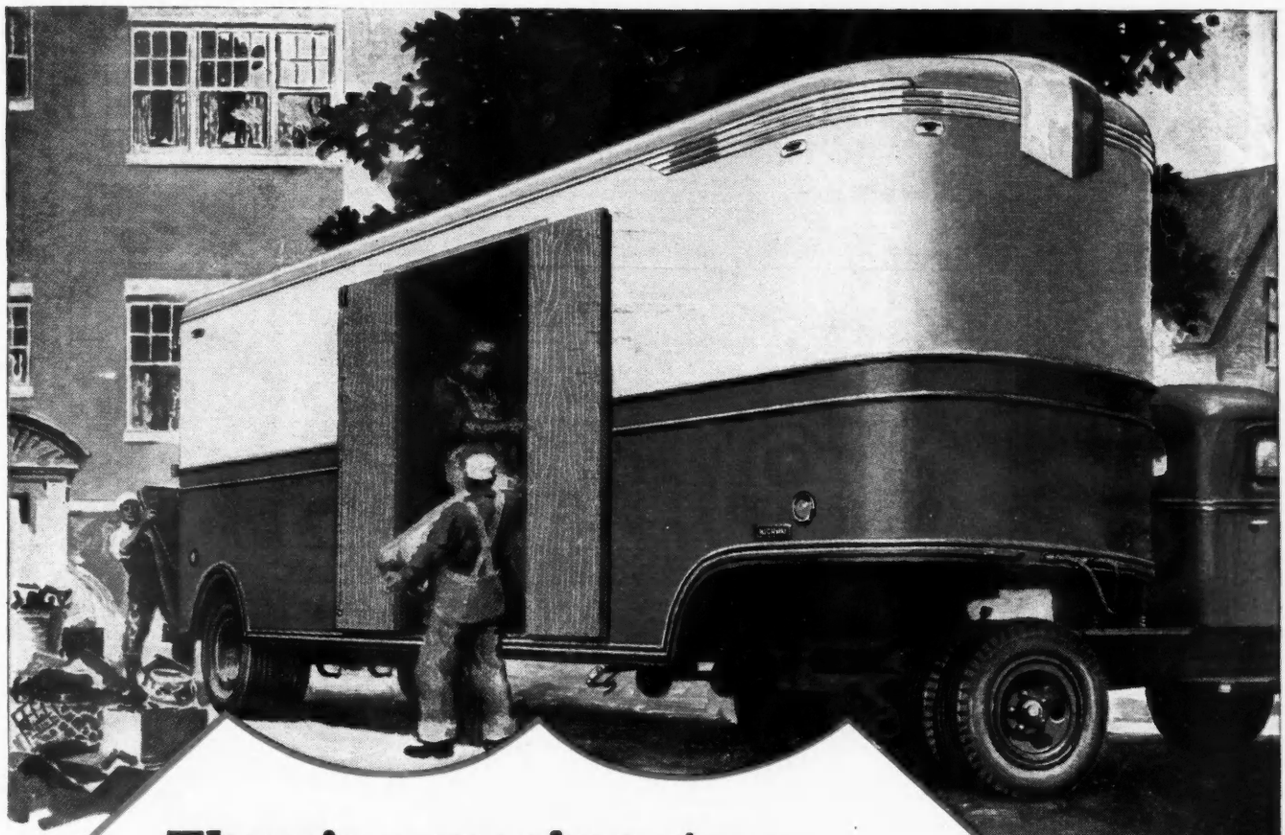
H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive X Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make	Location	Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Autocar.....C-50.....		200	200	23000	▲9500	10.00/20	10.00/22	Own 377	6-4x5	377	5.8	292	119-2800	7-3¼x11⅞	Y	Own DF5	5	Own F	2SF	H	7.56-8.27	Tim 35100	Ws4IA			658	947	N	2I	120	9x3x¼	T
2	(T).....C-50-T.....		148	164	23000	▲8950	10.00/20	10.00/22	Own 377	6-4x5	377	5.8	292	119-2800	7-3¼x11⅞	Y	Own DF5	5	Own F	2SF	H	7.56-8.27	Tim 35000	Ws4IA			594	838	N	2I	68	9x3x¼	T
3	(c.o.e.).....U-50.....		142	142	23000	▲8950	10.00/20	10.00/20	Own 377	6-4x5	377	5.8	292	119-2800	7-3¼x11⅞	Y	Own UDF5	5	Own F	2SF	H	** 8.27	Tim 35100	Ws4IA			658	947	N	2I	120	9x3x¼	T
4	(c.o.e.).....U-50T.....		96	96	23000	▲8800	10.00/20	10.00/20	Own 377	6-4x5	377	5.8	292	119-2800	7-3¼x11⅞	Y	Own UDF5	5	Own F	2SF	H	** –8.27	Tim 35100	Ws4IA			658	947	N	2I	74	9x3x¼	T
5	.....C-70.....		200	200	26000	▲10300	11.00/20	11.00/20	Own 447	6-4¼x5½	447	5.7	352	133-2500	7-3¼x13	Y	Own TF5	5	Own F	2SF	H	7.56-8.27	Tim 27454	Ws4IA			658	947	N	CD	120	9x3x¼	T
6	.....C-70-S.....		200	200	28000	▲10400	11.00/20	11.00/20	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own TF5	5	Own TK	2SF	H	7.28-8.51	Tim 27454	Ws4IA			658	947	N	CD	120	9x3x¼	T
7	(T).....C-70-T.....		148	164	26000	▲9400	10.00/20	11.00/20	Own 447	6-4¼x5¼	447	5.7	352	133-2500	7-3¼x13	Y	Own TF5	5	Own F	2SF	H	7.56-8.27	Tim 35000	Ws4IA			594	838	N	CD	68	9x3x¼	T
8	(T).....C-70-TS.....		148	164	28000	▲10100	11.00/20	11.00/22	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own TF5	5	Own TK	2SF	H	7.28-8.51	Tim 27454	Ws4IA			658	947	N	CD	68	9x3x¼	T
9	(e.u.s.).....U-70.....		128	163	26000	▲10900	11.00/20	1..00/22	Own 447	6-4¼x5¼	447	5.7	352	133-2500	7-3¼x13	Y	Own UTF5	5	Own F	2SF	H	7.56-8.27	Tim 27454	Ws4IA			658	947	N	CD	103¼	9x3x¼	T
10	(e.u.s.)....U-70S.....		128	163	28000	▲10900	11.20/20	11.00/22	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own UTF5	5	Own TK	2SF	H	7.28-8.51	Tim 27454	Ws4IA			658	947	N	CD	103¼	9x3x¼	T
11	(e.u.s.)...U-70T.....		109	109	26000	▲10250	11.00/20	11.00/22	Own 447	6-4¼x5¼	447	5.7	352	133-2500	7-3¼x13	Y	Own UTF5	5	Own F	2SF	H	7.56-8.27	Tim 27454	Ws4IA			658	947	N	CD	84¼	9x3x¼	T
12	(e.u.s.)..U-70TS.....		112	112	28000	▲10550	11.00/20	11.00/22	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own UTF5	5	Own TK	2SF	H	7.28-8.51	Tim 27454	Ws4IA			658	947	N	CD	87¼	9x3x¼	T
13	.....C-90.....		200	200	30000	▲11900	11.00/24	11.00/24	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own TF4&A3	12	Own G	2SF	H	** 8.76	Tim 27454	Ws4IA			739	1050	N	CD	120	10½x3x⅞	T
14	†.....C-90D.....		171	171	44000	▲13300	11.00/24	12.00/24♦	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	OTF4, BL703	12	Tim 79746W	2SF	R	9.47-11.36	Tim 27453	Ws4IA			739	1050	N	CD	90	10½x3x⅞	LTf
15	(T).....C-90T.....		148	164	30000	▲11050	11.00/22	11.00/24	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own TF5	5	Own G	2SF	H	7.40-8.76	Tim 27454	Ws4IA			658	947	N	CD	68	9x3x¼	T
16	(e.u.s.).....U-90.....		128	163	30000	▲11700	11.00/22	11.00/24	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own UTF5	5	Own G	2SF	H	7.40-8.76	Tim 27454	Ws4IA			658	947	N	CD	103¼	9x3x¼	T
17	(e.u.s.)...U-90T.....		109	109	30000	▲10900	11.00/22	11.00/24	Own 501	6-4½x5¼	501	5.7	397	145-2500	7-3¼x13	Y	Own UTF5	5	Own G	2SF	H	7.40-8.76	Tim 27454	Ws4IA			658	947	N	CD	84¼	9x3x¼	T
18	(D).....DC-100.....		215	215▼	45000	▲13200	10.00/20	10.00/22	Cum HB600	6-4⅞x6	672	17.	500	150-1800	7-4½x15¾	Y	BL7741, 703A	12	Own G	2SF	H	** 6.01	Tim 27454	Ws4IA			658	947	N	CD	126⅄	9x3x¼	LTf
19	(D)†...DC 100D.....		158	158	54000	▲15400	12.00/24	12.00/24♦	Cum HBD600	6-4⅞x6	672	17.	500	150-1800	7-4½x15¾	Y	BL7741, 703	12	Tim 79746W	2SF	R	9.23-11.36	Tim 27453	Ws4IA			739	1050	N	CD	83⅄	10½x3x⅞	LTf
20	(D)(T) DC-100T.....		159	159	36000	▲12900	10.00/20	11.00/24	Cum HB600	6-4⅞x6	672	17.	500	150-1800	7-4½x15¾	Y	BL7741, 703A	12	Own G	2SF	H	6.01-7.40	Tim 27454	Ws4IA			658	947	N	CD	70⅄	10½x3x¼	CTf
21	Available																															
22	.....CS200-SP.....		126	133	15000	.....	7.00/20D	7.50/20	Wau 6BM	6-3⅝x4¼	263	5.9	180	78-2800	7-2⅝x10¼	N	WG T9	4	Tim 53440H	8SF	H	** –6.67	Tim 32502H	L4IH			.....	.....	a	TX	Opt	10x3x¼	T
23	.....C-250.....		105	....	18000	.....	8.25/20D	9.00/20	Wau 6BZ	6-4x4¼	320	5.9	210	95-2500	7-2⅝x10¼	N	Fu 5A330	5	Tim 54411H	8SF	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
24	.....CS-250-SP.....		105	....	20000	.....	8.25/20D	9.00/20	Wau 6BZ	6-4x4¼	320	5.9	210	95-2500	7-2⅝x10¼	N	Fu 5A330	5	Tim 56410H	8SF	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
25	.....CS-400-LSP.....		105	....	21500	.....	9.00/20D	10.00/20	Wau 6BZ	6-4x4¼	320	5.9	210	95-2500	7-2⅝x10¼	N	Fu 5A330	5	Tim 56410H	8SF	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
26	.....CS-500-SP.....		105	....	22000	.....	9.00/20D	10.00/20	Wau 6MZA	6-4¼x4⅜	404	5.9	286	112-2500	7-2⅝x12½	Y	Fu 5F430	5	Tim 56410H	8SF	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
27	.....CS-550-SP.....		105	....	24000	.....	9.00/20D	10.00/20	Wau 6MZA	6-4¼x4⅜	404	5.9	286	112-2500	7-2⅝x12½	Y	Fu 5F430	5	Tim 58300H	8SF	R	6.83–7.4	Tim 35000H	L4IH	380	660	a	TX	Opt	12x3x¼	T
28	....CS-550-SPX.....		112	....	32000	.....	11.00/20D	11.00/20	Wau 6MZA	6-4¼x4⅜	404	5.9	286	112-2500	7-2⅝x12½	Y	Fu 5F430	5	Tim 8200H	2F	R	** –7.84	Tim 26450H	L4IH	570	1051	a	TX	Opt	14x3x⅞	T
29	.....CS-600.....		Opt	Opt	36000	.....	11.00/20	11.00/24	Wau 6SRKR	6-4⅝x5½	517	5.9	365	125-2300	7-2⅝x12½	Y	Fu 5F430	5	Tim 8200PA	2F	R	** –7.84	Tim 27452TW	L4IH	722	1051	a	TX	Opt	14x3x⅞	T
30	.....CS-600-SP.....		Opt	Opt	40000	.....	11.00/20	11.00/24	Wau 145GK	6-5¼x6	779	5.6	590	186-2000	7-3½x17¾	Y	Fu 5A920▼	5	Tim 8200PA	2F	R	6.42-7.84	Tim 27452TW	L4IH	722	1051	a	TD	Opt	14x3x⅞	T
31	(D)CS-600-SP.Opt.....		Opt	Opt	40000	.....	11.00/20	11.00/24	Cum HB600	6-4⅞x6	672	17.	510	150-1800	7-4½x16½	Y	Fu 5A920▼	5	T 8W3012PA	WF	R	** –6.16	Tim 27452TW	L4IH	.....	.....	A	TD	Opt	14x3x⅞	T
32	Brockway.....78.....		138	164	13000	3965	6.00/20D	32x6	Con 24B	6–⅄x4¾	210	6.0	154	71-3100	4-2⅝x6	N	WG T9	4	Tim 53521H	8SF	H	5.66–6.6	Tim 30000H	L4IH	255	402	a	TX	65⅄	8x3x¼	T
33	.....83.....		138	176	14000	4100	6.50/20D	7.50/20	Con 25B	6–3⅞x4⅜	244	6.2	180	80.5-3100	4-2⅝x6‡	N	WG T9	4	Tim 53521H	8SF	H	5.66–6.6	Tim 30000H	L4IHV	255	402	a	TX	65⅄	8x3x¼	T
34	.....88.....		150	176	15000	4500	6.50/20D	7.50/20	Con 25B	6–3⅞x4⅜	244	6.2	180	80.5-3100	4-2⅝x6‡	N	WG T9	4	Tim 53307H	8SF	H	6.2–6.8	Tim 30000H	L4IHV	298	477	a	TX	71⅄	8x3x¼	T
35	.....92.....		150	188	16000	4700	7.00/20D	8.25/20	Con 25B	6–3⅞x4⅜	244	6.2	180	80.5-3100	4-2⅝x6‡	N	WG T9	4	Tim 54411H	8SF	H	5.83–6.8	Tim 31000H	L4IHV	329	580	a	CD	83⅄	8x3x¼	T
36	.....94.....		156	188	18500	5050	7.50/20D	8.25/20	Con 25B	6–3⅞x4⅜	244	6.2	180	80.5-3100	4-2⅝x6‡	N	BL B341	4	Tim 56411H	8SF	H	6.16–7.4	Tim 31000H	L4IHV	370	660	a	CD	83⅄	8x3x¼	T
37	.....112.....		150	188	18000	5150	7.00/20D	8.25/20	Con 38B	6-3¾x4⅜	290	6.0	217	92-2800	7-2⅝x12⅄	N	BL B341	4	Tim 54411H	8SF	H	5.83–6.8	Tim 31000H	L4IHV	329	580	a	CD	77⅄	8x3x¼	T
38	.....128.....		156	188	20000	5550	7.50/20D	8.25/20	Con 38B	6-3¾x4⅜	290	6.0	217	92-2800	7-2⅝x12⅄	N	BL B341	4	Tim 56411H	8SF	H	5.71–7.4	Tim 31000H	L4IHV	370	660	a	CD	83⅄	8x3x¼	T
39	.....146.....		126	206	20000	6060	8.25/20D	9.00/20	Con 40B	6-4x4⅜ •	330	6.0	245	104-2800	7-2⅝x12⅄	Y	Fu 5A330	5	Tim 56411H	8SF	R	5.76–7.4	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
40	(T).....147.....		132	164	.....	6000	8.25/20D	9.00/20	Con 40B	6-4x4⅜ •	330	6.0	245	104-2800	7-2⅝x12⅄	Y	Fu 5A333	5	Eat A17-17000	8Sfd	H	Dual Rge.	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
41	.....152.....		126	206	22000	6350	8.25/20D	9.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A433	5	Tim 56411H	8SF	R	5.71–6.83	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
42	(T).....153.....		132	164	.....	6400	8.25/20D	9.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A433	5	Tim 58300H	8SF	H	6.14–7.8	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
43	(T).....154.....		132	164	.....	6500	8.25/20D	9.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A433	5	Eat A17-71000	8SFd	H	Dual Rge.	Tim 32505H	L4IHV	370	660	a	CD	53	8x3x¼	T
44	(T).....156.....		132	164	.....	6950	9.00/20D	10.00/20	Con 42B	6-4⅄x4⅝	405	5.7	305	112-2500	7-2½x13½	Y	Fu 5A433	5	Eat A9-20000	8SFd	H	Dual Rge.	Tim 32505H	L4IHV	459	768	a	CD	53	8¼x3x⅄	T
45	.....162.....		121	219	25000	7250	9.00/20D	10.00/20	Con 41B	6-4½x4⅝	371	5.9	280	100-2500	7-2⅞x13½	Y	Fu 5A433	5	Tim 58300H	8SF	R	6.14–7.8	Shu 15785B	L4IHV	370	663	a	CD	51	8¼x3x⅄	T
46	.....166.....		121	219	28000	7800	10.00/20D	11.00/20	Con 42B	6-4⅄x4⅝	405	5.7	305	112-2500	7-2½x13½	Y	Fu 5A433	5	Wis 1337H	2F	R	5.63–8.59	Shu 15785B	L4IHV	459	772	a	CD	51	8¼x3x⅄	T
47	.....170X.....		153	219	25000	7960	9.00/20D	10.00/22	Con 33B	6-4⅛x4⅜	381	4.7	276	106-2600	7-2¾x13⅛	Y	Fu 5A462	5	Tim 72300H	2F	R	5.78–7.35	Shu 15785B	L4IHV	370	663	a	CD	83⅄	8¼x3x⅄	T
48	.....175X.....		153	219	30000	8550	9.00/20D	11.00/22	Con 34B	6-4⅛x4⅜	427	5.4	322	133-2600	7-2¾x13⅛	Y	Fu 5A462	5	Wis 1337BH	2F	R	5.63–8.59	Shu 15785B	L4IHV	459	772	a	CD	83⅄	8¼x3x⅄	T
49	.....195X.....		153	219	28000	8650	10.00/20D	11.00/22	Con 33B	6-4⅛x4⅜	381	4.7	276	106-2600	7-2¾x13⅛	Y	Fu 5A462	5	Wis 1337BH	2F	R	5.63–8.59	Shu 15785B	L4IHV	459	772	a	CD	83⅄	8¼x3x⅄	T
50	.....220X.....		153	219	34000	9050	11.00/20D	12.00/24	Con 34B	6-4⅝x4⅜	427	5.4	322	133-2600	7-2¾x13⅛	Y	Fu 5A462	5	Wis 1757H	2F	R	6.06–8.82	Shu 15795B	L4IHV	536	899	a	CD	83⅄	8¼x3x⅄	T
51	.....240X.....		153	219	30000	8590	10.00/20D	11.00/24	Con 35B	6-4½x5¼	501	5.4	370	144-2400	7-2¾x13⅛	Y	Fu 5A462	5	Wis 1337BH	2F	R	5.63–7.52	Shu 15785B	L4IHV	459	772	a	CD	83⅄	8¼x3x⅄	T
52	.....260X.....		195	219	34000	9720	11.00/22D	12.00/24	Con 35B	6-4½x5¼	501	5.4	370	144-2400	7-2¾x13⅛	Y	Fu MHU	4	Wis 1757H	2F	R	6.06–8.82	Shu 15795B	L4IHV	536	899	a	CD	125⅄	8¼x3x⅄	T
53	.....260S.....		195	219	36000	10000	11.00/24D	12.00/24	Con 35B	6-4½x5¼	501	5.4	370	144-2400	7-2¾x13⅛	Y	Fu MHU	4	Wis 1757H	2F	R	6.06–8.82	Shu 15795B	LW4IDV	600	899	a	CD	125⅄	8¼x3x⅄	B
54	Chevrolet(1)...CK.....	▲637	115	115	■4600	2270	6.00/16-48	6.50/16-S	Own Regular	6-3½x3⅜	216	6.5	174	90-3300	4-2¾x5⅛	N	Own	3	Own Regular	Hy$	T	** –4.11	Own	O4IH			161	242	a	2I	38¼	5¾x2¼x⅄	C
55	.....OR.....	▲770	134	134	■11000	3070	•6.50/20-S	7.00/20-10	Own Regular	6-3½x3⅜	216	6.5	174	90-3300	4-2¾x5⅛	N	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	57¾	7x2¾x⅄	CP
56	.....OS.....	▲800	160	160	■11000	3285	•6.50/20-S	7.00/20-10	Own Regular	6-3½x3⅜	216	6.5	174	90-3300	4-2¾x5⅛	N	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	83¼	7x2¾x⅄	P
57	(School Bus)...OW.....	▲960	160	160	■11700	3585	6.50/20D	7.00/20-10	Own Regular	6-3½x3⅜	216	6.5	174	90-3300	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	N	7x2¾x⅄	P
58	(School Bus)...OG.....	▲1170	195	195	■14000	4130	7.50/20D	8.25/20-10	Own Regular	6-3⅄x3¼	235	6.6	192	93-3100	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	N	7½x2¼x¼	P
59	(c.o.e.).....OH.....	▲1310	109	109	■14000	•3614	7.50/20D	8.25/20-10	Own Regular	6-3⅄x3¼	235	6.6	189	90-3100	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	62½	7x2¾x⅄	P
60	(c.o.e.).....OI.....	▲1335	132	132	■14000	•3679	7.50/20D	8.25/20-10	Own Regular	6-3⅄x3¼	235	6.6	189	90-3100	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	86	7x2¾x⅄	P
61	(c.o.e.).....OJ.....	▲1350	158	158	■14000	•3924	7.50/20D	8.25/20-10	Own Regular	6-3⅄x3¼	235	6.6	189	90-3100	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	111½	7x2¾x⅄	P
62	.....OE.....	▲1100	134	134	■14000	3840	7.50/20D	8.25/20-10	Own Regular	6-3⅄x3¼	235	6.6	192	93-3100	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	57¾	7x2¾x⅄	P
63	.....OF.....	▲1120	160	160	■14000	3935	7.50/20D	8.25/20-10	Own Regular	6-3⅄x3¼	235	6.6	192	93-3100	4-2¾x5⅛	Y	Own	4	Own Regular	□	HyF	H	** –6.17	Own	O4IH			329	478	a	2I	83¾	7x2¾x⅄	P
64	Corbitt (T)..18TG.....		137	137	18000	‡7200	9.00/20	10.00/20	Con M6330	6-4x4½	330	5.7	240	102-2800	7-2⅝x12	Y	Fu 5A330	5	Tim 56410PA	8SF	H	** –6.17	Tim 32502TW	Ws4IA			.....	744	a	TX	60½	7⅞x3¼x⅄	T
65	(T).....22TG.....		145	145	22000	‡8500	10.00/20	10.00/22	Con B6427	6-4⅄x4⅞	427	6.1	332	127-2600	7-2⅝x13½	Y	Fu 5A433	5	Tim 58300PA	8SF	H	** –5.25	Tim 35000TW	Ws4IA			.....	847	a	TX	60½	8x3¼x¼	T
66	(T).....25TG.....		148	148	25000	‡9600	10.00/22	11.00/22	Con R6513	6-4½x5½	513	5.9	400	165-2600	7-3¼x14½	Y	Fu 5A620	5	Tim 58415PA	8SF	H	** –6.14	Tim 35100TW	Ws4IA			.....	946	a	2	60½	8½x3¼x⅄	T
67	(T).....28TG.....		148	148	28000	‡9800	10.00/22	11.00/24	Con R6602	6-4⅞x5⅞	602	6.0	460	185-2600	7-3¼x14½	Y	Fu 5A650	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA			.....	1159	a	TD	60½	8½x3¼x⅄	T
68	(D) (T)....22TD.....		145	145	22000	‡8700	10.00/20	10.00/22	Her DWXD	6-4¼x4⅜	404	...	330	146-2600	7	Y	Fu 5A430	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35000TW	Ws4IA			.....	847	a	TX	60½	8x3¼x¼	T
69	(D) (T)....25TD.....		148	148	25000	‡9800	10.00/22	11.00/22	Her DRXC	6-4⅝x5¼	529	...	400	140-2000	7-3½x13¾	Y	Fu 5A420	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35100TW	Ws4IA			.....	946	a	2	60½	8½x3¼x⅄	T
70	(D) (T)....27TD.....		152	152	27000	‡10000	10.00/22	11.00/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 5A420	5	Tim 58415PA	8SF	H	** –5.14	Tim 26450W	Ws4IA			.....	1055	a	2	60½	8½x3¼x⅄	T
71	(D) (T)....28TD.....		155	155	28000	‡10400	10.00/22	11.00/24	Cum NHB6	6-5½x6	742	...	575	200-2100	7	Y	Fu 5A920	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA			.....	1159	a	TD	60½	8½x3¼x⅄	T
72	.....18BG.....		137	Opt	18000	.....	9.00/20	10.00/20	Con M6330	6-4x4⅜	330	5.7	240	102-2800	7-2⅝x12	Y	Fu 5A330	5	Tim 56410H	8F	H	** –6.17	Tim 32502H	L4IHV	.....	.....		TX	.....	8x3¼x¼	T
73	.....22BG.....		145	Opt	22000	.....	10.00/20	10.00/22	Con B6371	6-4½x4⅝	371	5.7	280	100-2500	7-2½x13½	Y	Fu 5A430	5	Tim 58300H	8F	H	** –6.14	Tim 35000H	L4IHV	.....	660	a	TX	....	8x3¼x¼	T

‡ Weight of complete truck tractor less fifth wheel. ‡ Rear 9.00/20 10-ply. □ See optional units. ■ See exception to Gross Vehicle Weight. ▲ See exceptions to list price definition
• 6.00/20-6 front, 6.50/20 rear. ° See exceptions to chassis weight definition. ▼ Rating applies with 3rd axle. ▽ or Fu 3A92 with 3 forward speeds. ⅄ Includes Cab.
♦ Front; rear 14.00/24. ◆ and Brown Lipe 703 † Dump truck models.



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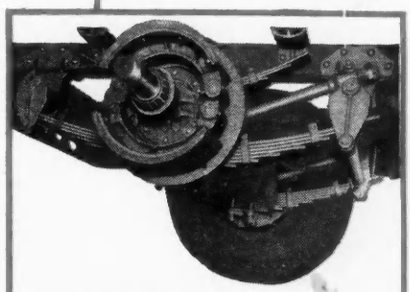
You can get complete information and specifications on the new Highway Warehouseman's Van from the full-color folder just off the press. It's free on request. Write today for your copy, and learn why it's to your advantage to let your next trailers be Highways!



Highway Warehouseman's Van Running Gears are built in 12,000 and 16,000 pound capacities. Helper springs support heavy loads; flexible main spring insures easy riding for light loads. Forged radius rods rubber-bushed at lower end, bronze-bushed at upper end.

HIGHWAY TRAILER COMPANY

General Offices, Edgerton, Wisconsin

Factories at: Edgerton, Wis., Stoughton, Wis., Farmingdale, L. I., N. Y.

Commercial Truck Trailers • Earth Boring Machines
Winches and other Public Utility Equipment

On Every U.S. 59 *Highway*

HIGHWAY AMERICA'S QUALITY TRAILERS

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make	Location	Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Corbitt 25BG	.....	148	Opt	25000	.....	10.00/22	11.00/22	Con B6427	6–4¼x4⅞	427	6.1	332	127–2600	7–2¾x13½	Y	Fu 5A430	5	Tim 58415PA	SF	H	** –6.14	Tim 35100TW	Ws4IA	....	946	a	TX	.....	84½	8½x3¼x¼	T
2	Cont'd....28BG	.....	148	Opt	28000	.....	11.00/22	11.00/24	Con R6513	6–4½x5⅝	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A620	5	Tim S200PA	2F	H	** –6.42	Tim 26450W	Ws4IA	....	1159	a	TD	.....	101½	8½x3½¼	Tf
3	(D).....18BD	.....	137	Opt	18000	.....	9.00/20	10.00/20	Her DJXC	6–3½x4½	298	...	208	83–2600	7–3x10	Y	Fu 5A330	5	Tim 96710PA	dF	H	6.08–8.12	Tim 32502TW	Ws4IA	....	744	a	TX	.....	84	8x3¼x¼	T
4	(D).....25BD	.....	148	Opt	25000	.....	10.00/22	11.00/22	Her DWXD	6–4¼x4¾	404	...	330	146–2600	7–.....	Y	Fu 5A430	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35000TW	Ws4IA	....	847	a	TX	.....	84½	8½x3¼x½	T
5	Diamond T.404HH	.....	139	175	14700	5000	8.25/20D	8.25/20	Her CBJXE	6–3½x4¼	245	5.7	174	77–2800	7–2½x10‡‡	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	522	A	TX	60	8½x3½x¼	T
6	509	.....	139	175	14700	5200	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	5.9	214	86–2800	7–2½x10‡‡	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	....	A	TX	60	8½x3½x¼	T
7	.....509S	.....	106	151	14700	5300	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	5.9	214	86–2800	7–2½x10‡‡	Y	WG T9A	4	Eat A7-1350	SF	H	Dual Rge.	Cla F452	L4IHV	363	....	A	TX	60	8½x3½x¼	T
8	.....614H	.....	139	175	18800	6200	9.00/20	9.00/20	Her CBJXD	6–4x4¼	320	5.9	228	96–2800	7–2½x10‡‡	Y	Cla 250V	5	Eat A34-18000	SF	H	Dual Rge.	Cla F450	L4IHV	481	....	A	TD	60	8½x3½x¼	T
9	702	.....	130	142	23000	8200	10.00/20D	10.00/20	Her WXLC-3	6–4¼x4¾	404	5.9	300	114–2800	7–2¾x13¼	Y	Cla 270V	5	Eat A30-18001	SF	R	Dual Rge.	Tim 35100TW	Ws4IA	618	....	A	TD	60	10x3½x¼	T
10	.....806H	.....	154	190	28000	9400	11.00/20D	11.00/20	Her WXLC3	6–4¼x4¾	404	5.9	300	114–2800	7–2¾x13¼	Y	Spi 6241-6031	12	Tim U200P	SF	R	** –7.84	Tim 35100TW	Ws41A	722	....	A	TD	84	10½x3½x½	T
11	900	.....	154	154	30000	10000	10.00/22D	10.00/22	Her RXLC	6–4½x5¼	529	5.4	365	132–2100	7–3½x13½	Y	Spi 6241-703	12	Tim U200P	2F	R	** –7.08	Tim 36021TW	Ws41A	722	....	A	TD	84	10½x3½x½	T
12	(D).....910	.....	172	172	36000	12300	10.00/22D	10.00/20	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16¾	Y	Spi 7851, 703	15	Tim U200P	2F	R	** –7.08	Tim 36021TW	Ws41A	722	....	A	TD	90½	10½x3½x½	T
13	Dodge.....WC	.....	116	116	4200	.....	6.00/16	5.25/208	Own	6–3¼x4½	217	6.8	172	95–3600	4–2½x4‡‡	N	NP	3	Own	HyS	H	3.70–4.70	Own	O4IH	148	251	CI	TX	40‡‡	6½x2½x½	....
14	.....WF31	.....	135	135	13500	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Own	HyF	H	5.10–6.80	Own	O4IH	252	406	CI	TX	60	7x2¾x.21	P
15	.....WF32	.....	160	160	13500	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Own	HyF	H	5.10–6.80	Own	O4IH	252	406	CI	TX	84‡‡	7x2¾x.21	C
16	.....WFM38	.....	159	159	13500	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Own	HyF	H	5.10–6.80	Own	O4IH	252	406	CI	TX	114	7½x2‡‡x½	P
17	.....WFA31	.....	135	135	14000	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	60	7x2¾x.21	P
18	.....WFA32	.....	160	160	14000	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	84‡‡	7x2¾x.21	....
19	.....WH47	.....	160	160	15000	.....	6.50/20	8.25/20	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	84‡‡	8½x2‡‡x½	....
20	.....WH45	.....	136	136	15000	.....	6.50/20	8.25/20	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	84‡‡	8½x2‡‡x½	P
21	.....WHA45	.....	136	136	15000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	60‡‡	8½x2‡‡x½	P
22	.....WFMA38	.....	159	159	14000	.....	6.50/20	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	.	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	114	7½x2‡‡x½	....
23	.....WD20	.....	120	120	6400	.....	6.50/16^	6.50/16	Own	6–3¼x4½	230	6.8	184	105–3600	4–2½x4‡‡	N	NP	3	Own	HyF	H	3.90–4.89	Own	O4IH	190	293	CI	TX	44‡‡	6½x2x½	....
24	.....WD21	.....	133	133	6400	.....	6.50/16^	6.50/16	Own	6–3¼x4½	230	6.8	184	105–3600	4–2½x4‡‡	N	NP	3	Own	HyF	H	3.90–4.89	Own	O4IH	190	293	CI	TX	57‡‡	6½x2‡‡x½	....
25	.....WF33	.....	190	190	13500	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Own	HyF	H	5.10–6.80	Own	O4IH	252	406	CI	TX	114‡‡	7½x2‡‡x½	....
26	.....WFA33	.....	190	190	14000	.....	6.00/20‡	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	114‡‡	7½x2‡‡x½	....
27	.....WH46	.....	148	148	15000	.....	6.50/20	8.25/20	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	72‡‡	8½x2‡‡x½	....
28	.....WHA46	.....	148	148	16000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	72‡‡	8½x2‡‡x½	....
29	.....WHA47	.....	160	160	16000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	84‡‡	8½x2‡‡x½	....
30	.....WH48	.....	178	178	15000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	102‡‡	8½x2‡‡x½	....
31	.....WHA48	.....	178	178	16000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	102‡‡	8½x2‡‡x½	....
32	.....WH49	.....	220	220	15000	.....	6.50/20	8.25/20	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	144‡‡	8½x2½x½	....
33	.....WHA49	.....	220	220	16000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	144‡‡	8½x2½x½	....
34	.....WHM45	.....	105	105	15000	.....	6.50/20	8.25/20	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	60	8½x2‡‡x½	....
35	.....WHMA45	.....	105	105	16000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	60	8½x2‡‡x½	....
36	.....WHM48	.....	159	159	15000	.....	6.50/20	8.25/20	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Own	HyF	H	5.10–7.10	Own	O4IHV	335	609	CI	TX	114	8½x2½x½	....
37	.....WHMA48	.....	159	159	16000	.....	6.50/20	8.25/20°	Own	6–3⅞x4½	250	6.8	200	120–3800	4–2½x5‡‡	N	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	335	609	CI	TX	114	8½x2½x½	....
38	.....WFM35	.....	105	105	13500	.....	6.50/20	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Own	HyF	H	5.10–6.80	Own	O4IH	252	406	CI	TX	60	7x2¾x½	....
39	.....WFMA35	.....	105	105	14000	.....	6.50/20	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	60	7x2¾x½	....
40	.....WFM37	.....	129	129	13500	.....	6.50/20	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Own	HyF	H	5.10–6.80	Own	O4IH	252	406	CI	TX	84	7½x2‡‡x¼	....
41	.....WFMA37	.....	129	129	14000	.....	6.50/20	8.25/20	Own	6–3⅞x4¼	236	6.8	190	115–3800	4–2½x5‡‡	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	252	406	CI	TX	84	7½x2‡‡x¼	....
42	Duplex.....T	.....	136	190	18000	6000	7.50/20D	9.00/20	Her JXD	6–4x4¼	320	6.2	240	113–3000	7–2½x10‡‡	Y	Fu 5B33	5	Tim 56410	2F	H	** –6.83	Tim 32502	L4IHV	420	654	A	TX	59	9x3½x½	C
43	.....R	.....	144	190	25000	8820	8.25/20D	10.00/20	Her WXLC-3	6–4¼x4¾	404	5.8	299	139–2600	7–2¾x13¾	Y	Fu 5A43	5	Tim 98415	2F	R	6.53–8.53	Tim 35000	L4IHV	730	1016	A	TX	79¼	9x3½x½	C
44	.....SAC-H	.....	166	210	28000	9800	10.00/20D	11.00/20	Her RXB	6–4½x5⅛	501	5.4	360	121–2200	7–3x14	Y	Fu 5A620	5	Tim S-200P	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10¼x3½x½	C
45	.....KH	.....	166	210	32000	10500	10.00/20D	11.00/20	Her RXC	6–4½x5¼	529	5.4	395	132–2200	7–3x14¼	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10¼x3½x½	C
46	Federal.....18M	.....	146	194	15000	4700	8.25/20D	.....	Her JXBF	6–3½x4¼	263	6.5	189	93–3000	7–2½x10‡‡	N	WG T9	4	Tim 54412DP	SF	H	** –5.83	Tim 30003H	LT4IHV	314	532	a	TX	67	8½x2½x½ *	T
47	.....18M2	.....	146	194	15000	4830	8.25/20D	.....	Her JXBF	6–3½x4¼	263	6.5	189	93–3000	7–2½x10‡‡	N	WG T9	4	Tim 94440DP	dF	H	6.06–8.11	Tim 30003H	LT4IHV	314	532	a	TX	67	8½x2½x½ *	T
48	.....29M	.....	146	194	20000	5500	9.00/20D	.....	Her JXDF	6–4x4¼	320	6.5	230	109–2800	7–2½x10‡‡	N	Cla 205V	5	Tim 56410DP	SF	H	** –6.83	Tim 32514H	LT4IHV	390	654	a	TX	67	8½x2½x½ *	T
49	.....29M2	.....	146	194	20000	5690	9.00/20D	.....	Her JXDF	6–4x4¼	320	6.5	230	109–2800	7–2½x10‡‡	N	Cla 205V	5	Tim 96710DP	dF	H	6.07–8.12	Tim 32514H	LT4IHV	390	654	a	TX	67	8½x2½x½ *	T
50	.....29MA	.....	155	194	20000	5950	9.00/20D	.....	Her JXDF	6–4x4¼	320	6.5	230	109–2800	7–2½x10‡‡	N	Cla 205V†	5	Tim 58301DP	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	76	8½x2½x½ *	T
51	.....45M	.....	143	203	24000	7975	10.00/20D	.....	Con B6427	6–4⅞x4⅛	427	6.1	332	128–2600	7–2½x13½	Y	Cla 270VO	5	Tim 58301P	SF	R	** –6.83	Tim 35011TW	TW4IA	606	933	a	TD	60½	10x3½x¼ *	T
52	.....45M2	.....	143	203	24000	8350	10.00/20D	.....	Con B6427	6–4⅞x4⅛	427	6.1	332	128–2600	7–2½x13½	Y	Cla 270VO	5	Tim 98415P	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933	a	TD	60½	10x3½x¼ *	T
53	.....55M	.....	143	203	27000	8600	11.00/20D	.....	Con B6427	6–4⅞x4⅛	427	6.1	332	128–2600	7–2½x13½	Y	Cla 270VO	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72½	10x3½x¼ *	T
54	.....55MA	.....	155	203	27000	8880	11.00/20D	.....	Con B6427	6–4⅞x4⅛	427	6.1	332	128–2600	7–2½x13½	Y	Cla 270V†	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72½	10x3½x¼ *	T
55	.....60MA	.....	155	203	28000	9715	11.00/20D	.....	Con 22R	6–4½x5¼	501	5.4	384	148–2400	7–2¾x14½	Y	Cla 326V◆	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72½	10x3½x¼ *	T
56	.....60M2	.....	143	203	28000	9690	11.00/20D	.....	Con 22R	6–4½x5¼	501	5.4	384	148–2400	7–2¾x14½	Y	Cla 326V	5	Tim S300P	dF	R	6.53–8.53	Tim 36021TW	TW4IA	722	1051	a	TD	60½	10x3½x¼ *	T
57	Ford.....598T	♦985	158	158	13500	4240	7.50/20D	8.25/20-10	Own 59T	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Own 59T	4	Own 01T	FS	H	** –6.67	Own 01T	O4IH	303	563	c	TX	84.06	7x2.75x.21	CTf
58	(school bus) 594T	♦995	194	194	14500	3990	7.50/20D	8.25/20-10	Own 59T	8–3⅛x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Own 59T	4	Own 01T	FS	H	** –6.67	Own 01T	O4IH	303	563	c	TX	.....	7x2.75x.21	CTf
59	Hudson (½T. Pkp)	.....	128	128	4810	.....	6.50/16-6	6.50/16-6	Own 58	6–3x5	212	6.5	168	102–4000	3–▲▲	N	Own	3	Own	8$	H	** –4.55	Own	B4IH	141	242	C	2I	42½	7½x1¾x½	B
60	Intern'l (2)....K-1	690	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HDS	3	Own R1050	8$	H	3.72–5.11	Own F50	L41H	164	316	c	FX	38	6x2¼x½	C
61	.....K-1-M	700	102	113	4600	2150	6.00/16-4	6.50/16-6	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	O SA-HDS-A	3	Own R1050	8$	H	3.72–5.11	Own F150	L4IH	164	316	c	FX	.....	6½x2¼x½	C
62	.....K-2	695	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HDS	3	Own R1050	8$	H	3.72–5.11	Own F50	L41H	164	316	c	FX	50	6½x2¼x½	C
63	.....K-3	810	130	....	6650	2970	7.00/16-6	7.50/16-6	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HDS-A	3	Own R1150	SF	H	4.22–5.28	Own F150	L41H	195	367	c	FX	55	6½x2¼x½	C
64	.....K-3-M	.....	113	113	7000	2685	7.00/16-6	7.50/16-8	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own H41B	4	Own R1150	SF	H	4.22–5.28	Own F150	L41H	221	367	c	TX	....	6½x2¼x½	C
65	(a)(b).....K-5	900	135	177	13500	3585	6.00/20D	8.25/20	O-GRD 233	6–3⅞x4½	233	6.3	181	93–3400	4–2⅝x6‡‡	N	Own H41B	4	Own R1360	SF	H	5.28–7.16	Own F350	LH4IH	294	509	c	TX	60	8x3x½	T
66	(a)(b).....K-6	1315	134	176	14500	4475	6.50/20-6	8.25/20-10	Own BLD250	6–3⅞x4½	251	6.3	200	100–3200	4–2⅝x5‡‡	N	Own F51	5	Own R1450	SF	H	5.62–7.16	Own F470	LH4IHV	368	633	c	TX	60	8¼x3x½	T
67	(a)(b).....K-7	1585	134	176	16500	4810	7.00/20D	9.00/20	O-BLD 269	6–3⅞x4½	269	6.3	222	100–3000	4–2.75x‡‡	N	Own F51	5	Own R1560	SF	H	6.50–7.16	Own F470	LH4IHV	399	681	c	TX	60	8¼x3x½	T
68	(a)(b).....K-8	2400	137	197	20000	6155	7.50/20D	10.00/20	O-RED 361	6–4¼x4½	361	6.3	282	126–3000	7–3¼x10‡‡	Y	Own F51	5	Own R1570	8F	H	6.43–8.51	Own F550	LH4IHV	475	811	c	PX	60	8½x3½x½	T
69	(a)(b).....K-10	.....	149	197	22500	7195	9.00/20	11.00/20	Own RED401	6–4¼x5	401	6.3	318	140–2800	7–3¼x10‡‡	Y	Own F54	5	Own R1670	SF	H	6.43–8.05	Own F650	LH4IHV	552	654	c	FX	72	9½x3½x½	T
70	(a)(b).....KR-11	4225	149	197	27000	8100	9.00/20D	12.00/20	O-RED 450	6–4⅝x5	450	6.3	360	148–2600	7–3¼x10‡‡	Y	Own F54	5	Own R1700	8F	H	6.42–8.05	Own F750	WW4IA	616	1030	G	PX	72	10x3½x½	T

† Main transmission; auxiliary, Brown-Lipe 6031, 3 forward speeds. ◆ Main transmission; auxiliary, Brown-Lipe 703, 3 forward speeds. ▲ Rear 7.00/16S ° Rear 9.00/20D ‡ Rear 6.50/20D ^ 7.50/20 front. ▲▲—Diameter Front 2.343, Center 2.375, Rear 2.406. Total length-5.750. * For other than minimum standard WB–8½x2⅞x¼. ‡ For other than minimum standard WB–10½x3½x½. ♦Or CBJxB 6-3½x4¼

‡ Prices listed are authorized by O.P.A. for the basic chassis, with cab and body if specified. The engine specifications and tire sizes indicated are for "heavy duty" equipment which is supplied at extra charge. Distribution and delivery charges, federal, state and local taxes and optional equipment are extra.

Payloads *can be* increased without overloading tires, chassis or engine, and without exceeding legal highway load limits. Reduce the non-payload, the truck's dead weight.

Alcoa Aluminum is the safe way to achieve this weight reduction—proved by the thousands of trucks on the road today, after having served faithfully before and during the war. Aluminum from top sheet to bottom rail, in many chassis and engine parts, has proved its ability to withstand the grueling grind of trucking service.

Ask your builder about the increased earning capacity of equipment made lighter in weight, and sturdy, with Alcoa Aluminum. ALUMINUM COMPANY OF AMERICA, 2139 Gulf Building, Pittsburgh 19, Pennsylvania.

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ALCOA ALUMINUM

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Kenworth(D)..521		156	205	32000	12200	10.00/20	11.00/22	Cum NHB6	6-5¼x6	743	17.	565	200-2100	7-4½x16½	Y	BL 7841	4	Tim U200P ⁻	DR	H	6.42-7.84	Tim 36000	Ws4IA	646	1050	a	TD	72	9½x3¼x⅜	C
2	Reo.....19BHS		145	145	14000	4349	8.25/20D	8.25/20	Own GC245	6-3½x4¼	245	6.2	191	89-3100	7-2⅝x10.6	Y	Cla 185F	4	Tim 94427	2	H	6.06-8.12	Tim 30060	L4IHV	327	478	c	TX	84	9x3x¼	T
3	.....19BHS		145	145	14000	4205	7.50/20D	8.25/20	Own GC245	6-3½x4¼	245	6.2	191	89-3100	7-2⅝x10.6	Y	Cla 185F	4	Tim 54412	SF	H	** -6.8	Tim 30000	L4IHV	327	478	c	TX	84	9x3x¼	T
4	.....19CHS		165	165	14000	4402	8.25/20D	8.25/20	Own GC245	6-3½x4¼	245	6.2	191	89-3100	7-2⅝x10.6	Y	Cla 185F	4	Tim 54412	SF	H	** -6.8	Tim 30000	L4IHV	327	478	c	TX	105	9x3x¼	T
5	.....20BHS		145	165	15500	5147	8.25/20D	9.00/20	Own GC288	6-3½x5	288	6.2	221	94-3000	7-2⅝x10.6	Y	Cla 205V	5	Tim 56427	SF	H	** -6.16	Tim 31104	L4IHV	402	....	c	TX	84	9x3x¼	T
6	.....20XHS		130	130	15500	4985	8.25/20D	9.00/20	Own GC288	6-3½x5	288	6.2	221	94-3000	7-2⅝x10.6	Y	Cla 205V	5	Tim 94427	SF	H	** -6.16	Tim 30000	L4IHV	402	....	c	TX	69¼	9¼x3⅜x¼	T
7	.....20XHS		130	130	15500	4842	8.25/20D	9.00/20	Own GC288	6-3½x5	288	6.2	221	94-3000	7-2⅝x10.6	Y	Cla 205V	5	Tim 96000	2	H	6.06-8.12	Tim 31000	L4IHV	402	....	c	TX	70	9¼x3⅜x¼	T
8	.....25VBS		145	145	24000	7655	10.00/20D	10.00/20	Con 6427	6-4⅜x4⅞	427	6.1	324	127-2600	7-2¼x11⅜	Y	Cla 270V■	5	Tim S-200P	2F	H	** -7.84	Tim 35000	Ws4IA	476	....	c	TX	85	9¼x3⅜x⅜	T
9	.....25VBS		145	145	24000	7505	10.00/20D	10.00/20	Con 6427	6-4⅜x4⅞	427	6.1	324	127-2600	7-2¼x11⅜	Y	Cla 270V	5	Tim S-200P	2F	H	** -7.84	Tim 35000	Ws4IA	476	....	c	TX	85	9¼x3⅜x⅜	T
10	.....25VXS		130	130	24000	7445	10.00/20D	10.00/20	Con 6427	6-4⅜x4⅞	427	6.1	324	127-2600	7-2¼x11⅜	Y	Cla 270VO	5	Tim 98415	2	H	6.53-8.53	Tim 35000	Ws4IA	604	....	c	TX	70	9¼x3⅜x⅜	T
11	Sterling....HD115		155	185	32000	10200	10.00/20D	11.00/20	Con R6513	6-4½x5⅜	513	5.9	400	156-2600	7-3¼x14⅝	Y	Fu 5A62⅝	15	Tim S-2000P	2F	R	** -7.84	Rim 26450W	Ws4IA	800	1286	a	TX	76	9x3¼x¼	A
12	.....HC115		155	185	32000	10100	10.00/20D	11.00/24	Wau 6SRKR	6-4⅝x5⅛	517	5.5	369	125-2250	7-3x13¼		Fu 5A62⅝	15	Own 137W	C2	R	7.40-9.38	Tim 26450W	Ws4IA	726	1240	a	TX	76	9x3¼x¼	A
13	(D)....HC115H		176	211	32000	12000	10.00/20D	11.00/24	Cum HB600	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86⅝	12	Own 137W	C2	R	5.56-9.27	Tim 26450W	Ws4IA	726	1240	a	TX	88	9x3¼x¼	A
14	.....HC144		155	175	36000	10500	10.00/22D	12.00/24	Wau 6SRKR	6-4⅝x5⅛	517	5.5	369	125-2250	7-3x13¼	Y	Fu 5A62⅝	15	Own 144W	C2	R	8.27-9.38	Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅝x⅝	A
15	.....HC145		155	175	36000	10500	10.00/22D	12.00/24	Wau 6SRKR	6-4⅝x5⅛	517	5.5	369	125-2250	7-3x13¼	Y	Fu 5A62⅝	15	Own 146W	C2	R	8.27-9.38	Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅝x⅝	A
16	.....HC147		155	....	36000	10900	10.00/22D	12.00/24	Wau 6SRKR	6-4⅝x5⅛	517	5.5	369	125-2250	7-3x13¼	Y	Fu 5A62⅝	15	Own 147W	C2	R	8.27-9.38	Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅝x⅝	A
17	.....HC156		155	....	40000	11900	11.00/24D	12.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	369	125-2250	7-3x13¼	Y	Fu 5A62⅝	15	Own 156W	C2	R	8.18-9.27	Tim 27454W	Ws4IA	786	1270	a	TX	76	9¼x3⅝x⅝	A
18	.....HC165		155	....	40000	12000	11.00/24D	12.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	369	125-2250	7-3x13¼	Y	Fu 5A62⅝	15	Own 165W	C2	R	8.18-9.27	Tim 27454W	Ws4IA	786	1270	a	TX	76	9¼x3⅝x⅝	A
19	(D)....HC165H		165	175	40000	13500	11.00/24D	12.00/24	Cum HBD600	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86⅝	12	Own 165W	C2	R	8.18-9.27	Tim 27454W	Ws4IA	786	1270	a	TX	77	9¼x3⅝x⅝	A
20	(D)....HC175H		165	175	45000	14000	12.00/24D	13.00/24	Cum HBD600	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86⅝	12	Own 175W	C2	R	8.18-9.27	Tim 27454W	Ws4IA	786	1270	a	TX	77	9¼x3⅝x⅝	A
21	Stewart.....47B		134	205	13000	4900	6.50/20	8.25/20	Wau 6BM	6-3⅝x4⅛	262	5.7	175	77-2800	7-2⅝x10¼	N	WG T9	4	Cla R950	BF	H	6.37-6.88	Cla F268	L4IHV	285	512	c	T	54	8½x2¾x¼	T
22	.....49B		144	224	19500	5950	7.00/20	9.00/20	Wau 6BZ	6-4x4¼	318	5.7	210	86-3000	7-2⅝x10⅄	Y	Fu 5B330	5	Tim 56400	SF	R	6.83-7.80	Cla 450	L4IHV	408	742	E	T	64	10x2¾x⅄	T
23	.....58B		140	228	22000	7100	7.50/20	11.00/20	Wau 6MZA	6-4¼x4¾	404	5.3	300	105-2500	7-2⅝x12½	Y	Fu 5B430	5	Eat 1801	SF	R	** -7.16	Tim 35000	L4IHV	478	848	E	T	64‡	10x2¾x⅄	T
24	.....59B		140	228	25000	7490	8.25/20	11.00/20	Wau 6MZA	6-4¼x4¾	404	5.3	300	105-2500	7-2⅝x12½	Y	Fu 5B430	5	Eat 2680	2F	R	** -8.50	Tim 35100	L4IHV	510	990	E	T	64‡	10x2¾x⅄	T
25	.....38B		140	228	27000	8250	9.00/20	11.00/20	Wau 6SRKR	6-4⅝x5½	517	5.5	369	110-2400	7-3x13¼	Y	Fu 5A620	5	Tim 200V	2F	R	7.37-8.64	Eat 570	L4IHV	510	990	E	T	64	10x2¾x⅄	T
26	Studebaker....M5		113	113	4500	2210	6.50/16S	6.50/16S	Own 1M	6-3x4	170	6.5	134	80-4000	4-2⅞x5⅄	N	Own 664949	3	Own 663597	Hy	H	** -4.82	Own 664307	L4IH	157	276	Co	2I	45‡	7⅄x2⅛x⅜	T
27	.....M15A-20		120	120	7800	2850	7.00/17S	7.00/20S	Own 2M	6-3x4	170	6.5	134	80-4000	4-2⅞x5⅄	N	Own 673674	4	Own 664435	SF	H	5.66-6.60	Own 673625	L4IH	216	342	a	TX	52‡	7⅄x2⅛x⅜	T
28	.....M15A-28		128	128	10000	3085	7.50/17S	7.50/20S	Own 2M	6-3x4	170	6.5	134	80-4000	4-2⅞x5⅄	N	Own 673674	4	Own 665174	SF	H	6.60-5.66	Own 673625	L4IH	216	342	a	TX	52‡	8⅄x2⅝x⅜	T
29	.....M16		128	195	13500	3510	7.00/20D	8.25/20	Own 3M	6-3⅄x4⅜	226	6.5	176	94-3600	4-2½x5‡	N	Own 674989	4	Own 665171	SF	H	5.66-6.66	Own 664452	L4IH	280	442	a	TX	60‡	8⅛x2‡x⅜	T
30	(2 spd. R.axle)M16		128	195	15000	3880	7.00/20D	8.25/20	Own 3M	6-3⅄x4⅜	226	6.5	176	94-3600	4-2½x5‡	Y	Own 674989	4	Own 674681	SF	H	Dual Rge.	Own 664452	L4IH	280	442	a	TX	60‡	8⅛x2‡x⅜	T
31	Trucksteil(C)F18-5		140	194	18500	▲5265	7.50/20*	10.00/20	Ford	8-3⅄x3¾	239	6.4	176	100-3800	-2½x5¼	N	Ford	12	Cla R1300	SF	H	5.12-6.83	Ford	L4IHV	355	610	a	TX	65¾	7½x3x.47	CTf
32	(C).....C18-5		144	197	18500	▲5395	7.50/20*	10.00/20	Chevrolet	6-3⅄x3‡	235	6.6	192	93-3100	4-2¾x5⅄	N	Chevrolet	12	Cla R1300	SF	H	5.12-6.83	Chevrolet	L4IHV	355	610	a	TD	67	7½x3x.47	CTf
33	Ward La Fr....D-1		149	220	25000	9500	10.00/20	10.00/20	Con B6427	6-4⅄x4⅞	427	6.1	325	127-....	7-2⅝x13½	Y	Fu 5A430	5	Tim 58415PA	B	R	** -6.14	Tim 35011TW	Ws4A	600	928	c	TM	103½	9⅞x3x¼	....
34	.....D-1B		149	220	25000	9500	10.00/20	11.00/20	Con 22R	6-4½x5¼	501	5.4	384	148-....	7-2¾x14½	Y	Fu 5A620	5	Tim 58415PA	B	R	** -6.14	Tim 35011TW	Ws4A	600	928	c	TM	103½	9⅞x3x¼	....
35	.....D-1C		149	220	29000	9500	11.00/20	11.00/24	Con B6427	6-4⅄x4⅛	427	6.1	325	127-....	7-2⅝x13½	Y	Fu 5A430	5	Tim S-200P	S2	R	** -7.84	Tim 35011TW	Ws4A	673	1031	c	TM	103½	9⅞x3x¼	....
36	.....D-2		149	220	29000	12000	11.00/20	11.00/24	Con R6513	6-4½x5⅜	513	5.9	405	180-....	7-3¼x14½	Y	Fu 5A620	5	Tim S-200P	S2	R	** -7.84	Tim 35011TW	Ws4A	673	1031	c	TM	103½	10x3x⅄	....
37	.....D-3		149	220	30000	12000	11.00/22	12.00/24	Con R6572	6-4¾x5⅝	572	5.9	454	198-....	7-3¼x14½	Y	Fu 5A650	5	Tim U200P	S2	R	** -7.84	Tim 26458W	Ws4A	750	1159	c	TM	103½	10x3x⅄	....
38	(D).....D-5		155	226	35000	12500	11.00/22	12.00/24	Cum HB600	6-4⅞x6	672	17.	500	150-....	7-4½x16¾	Y	Fu 5A650	5	Tim U200P	S2	R	** -6.42	Tim 26458W	Ws4A	750	1159	c	TM	103½	10x3x⅄	....
39	.....FD-0		186	....		12000	11.00/20	11.00/24	Con 22R	6-4½x5¼	501	5.4	384	148-....	7-2¾x14½	Y	Fu 5A620	5	Tim R3100W	S2	R	** -8.15	Tim F3100W	Ws4A	627	1029	c	TM	99¾	9¼x3x⅄	....
40	.....FD-1		186	....	37000	12000	11.00/20	11.00/24	Con R6602	6-4⅞x5⅞	602	6.2	472	206-....	7-3¼x14½	Y	Fu 5A650	5	Tim R462W	S2	R	** -8.15	Tim F3100W	Ws4A	627	1029	c	TM	99¾	10x3x⅄	....
41	(D).....FD-2		186	....	37000	12500	11.00/22	11.00/24	Cum HB600	6-4⅞x6	672	17.	500	150-....	7-4½x16¾	Y	Fu 5A920	5	Tim R462W	S2	R	** -8.15	Tim F3100W	Ws4A	627	1029	c	TM	99¾	10x3x⅄	....
	Four-Wheel-Drive																														
42	Corbitt.....18FG		Opt	Opt	18000	6600	8.25/20	9.00/20	Con M6330	6-4x4¾	330	5.7	240	102-2800	7-2⅝x12	Y	Fu 5A33	5	Tim 56410H	SF	H	** -6.83	Tim F35H	L4IHV	....	578	a	TD	Opt	8x3¼x¼	T
43	.....22FG		159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6-4½x4⅝	371	5.7	280	100-2500	7-2¾x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	** -8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	T
44	.....25FG		Opt	Opt	25000	.....	10.00/22	11.00/22	Con R6513	6-4½x5½	513	5.9	400	165-2600	7-3¼x14½	Y	Fu 5A62	5	Tim R3100W	2F	H	** -8.14	Tim F3100W	Ws4IA	....	1030	a	TD	Opt	10½x3x¼	Tf
45	.....28FG		Opt	Opt	28000	.....	11.00/22	11.00/24	Con R6602	6-4⅞x5⅞	602	6.0	460	185-2600	7-3¼x14½	Y	Fu 5A65	5	Tim R462W	2F	H	** -8.14	Tim F3100W	Ws4IA	....	1030	a	TD	Opt	10½x3x¼	Tf
46	FWD.....HA		144	156	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6-4x4¼	320	5.9	223	95-2800	7-2⅛x10¼	Y	Own H	5	Own H	SF	H	6.6 -9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
47	.....HR		144	156	20000	▲8000	9.00/20	10.00/20	Wau MZR	6-4¼x4¾	404	5.7	270	98-2500	7-2⅝x12⅜	Y	Own H	5	Own H	SF	H	6.6 -9.06	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
48	.....HG		154	154	20000	▲8050	9.00/20	10.00/20	Wau MZR	6-4¼x4¾	404	5.7	270	98-2500	7-2⅝x12⅜	Y	Own H	5	Own H	SF	H	6.6 -9.06	Own H	L4IHV	391	807	a	T4	89¾	7⅄x3x‡	C
49	.....SU		150	150	25000	▲10420	11.00/20D	12.00/20	Wau SRKR	6-4⅝x5½	517	5.5	365	126-2450	7-3x13¾	Y	Own U	5	Own U	BF	H	6.7 -9.8	Own U	L4IHV	496	867	a	T4	90	7⅄x3x‡	C
50	.....M7		150	150	38000	▲15400	12.00/20D	12.00/20	Wau 145GK	6-5¼x6	779	5.6	585	186-2000	7-3½x17¾	Y	Own M	10	Wis R462	2F	H	** -7.53	Wis F409	Ws4IA	578	976	a	T4	90	10⅄x3x‡	C
51	(D).....M7		150	150	38000	▲15700	12.00/20D	12.00/20	Cum HB600	6-4⅞x6	672	17.	500	150-1800	7-4½x16¾	Y	Own M	10	Wis R462	2F	H	** -7.53	Wis F409	Ws4IA	578	976	a	T4	90	10⅄x3x‡	C
52	Marmon-MH440-4	6825	158	158	20700	▲8700	9.00/20D	10.00/20	Her WXLC3	6-4¼x4¾	404	5.4	293	118-2800	7-2⅝x8¾	Y	Fu 5A430	5	Tim R2090W	2B	H	** -8.43	Tim F2090W	W....A	584	887	c	F	72	9‡x3x¼	T
53	Herr...MH555-4	8525	161	161	24000	▲10200	10.00/20D	11.00/20	Her RXC	6-4⅝x5½	529	6.3	390	131-2200	7-3x9½	Y	Fu 5A620	5	Tim R3100W	2B	H	** -8.15	Tim F3100W	W....A	692	1039	c	F	72	10⅄x3x⅄	T
54	(C)....CMM5-4	866	134	134	13500	▲4847	7.50/20D	7.50/20	Ford	8-3⅄x3¾	239	6.4	176	100-3500	3-2½x4.71	N	Ford	4	Ford	S	H	** -6.67	Own M5	F....H	302	563	a	F	60⅄	7x2¾x⅄	T
55	(C)....CMM6-4	888	158	158	13500	4973	7.50/20D	7.50/20	Ford	8-3⅄x3¾	239	6.4	176	100-3500	3-2½x4.71	N	Ford	4	Ford	S	H	** -6.67	Own M5	F....H	303	563	a	F	84⅄	7x2¾x⅄	T
56	.....DVL-1		90	118	8500	4300	7.50/16S	8.25/18S	Willys MB	4-3½x4⅜	134	6.4	105	60-4000	3-2.33x5.48	Y	Own	3	None			7.10	Own	4IH	202	3.7	M2					
57	Oshkosh....W-307		149	204	23600	10200	10.00/20	11.00/20	Her WXLC3	6-4¼x4⅛	404	6.3	310	118-2500	7-2⅝x13¾	Y	Fu 5A43	5	Tim 58300	SF	H	** -7.8	Own W307	L41I	560	867	G	TX	82	8½x3x⅜	TF
58	.....W-700		150	204	30000	▲12000	11.00/20	12.00/20S	Her RXCO	6-4⅝x5½	529	5.4	380	128-2200	7-3x12¾	Y	Fu 5A620	5	Own W700	2F	H	** -6.6	Own W700	L4IH	630	975	G	TX	82	10½x3x⅜	TF
59	.....W-703		150	204	30000	▲12200	11.00/20	12.00/20S	Her RXLD	6-4¾x5¼	558	5.4	405	141-2200	7-3½x13¼	Y	Fu 5A620	5	Own W700	2F	H	** -6.6	Own W700	L4IH	630	975	G	TX	82	10½x3x⅜	TF
60	(D).....W-906		158	190	38000	▲14900	12.00/20	14.00/20S	Cum HB600	6-4⅞x6	672	...	500	150-1800	7-4½x16	Y	Fu 4A86	4	Own W906	2F	H	** -6.2	Own W906	LT4IWS	630	975	G	TX	90	10½x3x⅜	TF
61	Peterbilt(D)270DD	8950	165	Opt	27000	12500	10.00/20D	11.00/22	Cum HB600	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	Spi 7741	12	U-200P	2F	R	** -6.42	Tim 36000W	Ws4IA	800	1250	a	FD	80½	10¼x3⅛x⅄	TL

§ Equipped with 3 speed auxiliary transmission. ▲ Includes cab △ 7.50/20 front ■ Auxiliary transmission for logging operation • Rear 8.25/20

SHULER AXLES FOR WINTER WEISS!

"Get a load" of this Winter Weiss trailer dolly, and you'll see why Shuler was proud to have its axles chosen for the job. It was designed to carry up to 40,000 pounds of weight—and that's "getting a load" in *anybody's* language!

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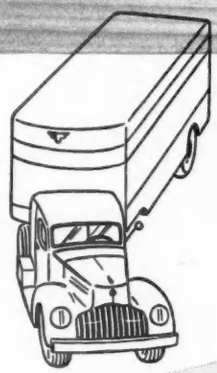
Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Walter (c.f.) ... FN	.....	126	150	20000	7500	9.00/20D	10.00/20S	Wau MZR	6–4¼x4¾	404	5.6	290	100–2500	7–2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G	FI	84	7x2¼x¼	C
2	(c.f.) .. FZM	.....	126	150	24000	8500	10.00/20D	12.00/20S	Wau MZR	6–4¼x4¾	404	5.6	290	100–2500	7–2⅝x12½	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x½	B
3	(c.f.) .. FKM	.....	126	150	24000	9000	10.00/20D	12.00/20S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13⅞	Y	Own FJD	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x½	B
4	(c.f.) .. FCK	.....	126	138	30000	10500	10.00/24D	11.00/24S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13⅞	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x½	B
5	(c.f.) .. FC	.....	138	162	32000	11000	11.00/24D	12.00/24S	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13⅞	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x½	B
6	(c.f.) .. FCR	.....	126	162	42000	12000	12.00/24D	12.00/24	Wau SRKR	6–4½x5½	517	5.5	365	125–2200	7–3x13⅞	Y	Own FC	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
7	(c.f.) .. FGB	.....	126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6–5¼x6	779	5.7	580	175–2000	7–3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
8	(c.f.) .. FGR	.....	126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	5.7	580	175–2000	7–3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x½	B
9	Willys-Jeep .. CJ-2A	*1090	80	80	2937	†1646	6.00/16	7.00/15.	Own CJ-2A	4–3⅛x4½	134	6.4	105	60–4000	3–2.33x5.48	N	WG T90A	3	Spl 41-2	Hy	H	** –5.38	Spl 25	B4H	118	520	a	F	80	4x1¼x⅄	P

Six-Wheelers

Wheels Driven

10	Autocar ▼																														
11	(D) DC10064.4R	.....	206	206	40000	▲15700	10.00/20	10.00/20	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¾	Y	BL 7741,703A	12	Tim SW3012W	WF	L	** –6.16	Tim 27454	Ws6IA	1102	1569	N	CD	117⅄	9x3x¼	LTf
12	(D) DC10064S.4R	.....	144	247	60000	▲18400	11.00/24	11.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x15¾	Y	BL 7741,703	12	Tim SD462W	2SF	L	**–10.01	Tim 27454	Ws6IA	998	1519	N	CD	70⅄	10¼x3x⅄	LTf
13	Corbitt 35RG	.....	Opt	Opt	35000	.....	10.00/20	10.00/22	Con B6427	6–4⅄x4⅞	427	6.1	332	127–2600	7–2⅞x13½	Y	Fu 5A43	5	T SBD1500PA	SF	L	** –6.44	Tim 35000TW	Ws6IA	....	1094	a	TX	Opt	10½x3x¼	Tf
14	..... 40RG	.....	Opt	Opt	40000	.....	10.00/22	11.00/22	Con R6602	6–4½x5½	6026	6.0	460	185–2600	7–3¼x14½	Y	Fu 5A65	5	T SDD3000PA	2F	L	** –6.84	Tim 35100TW	Ws6IA	....	1567	a	TD	Opt	12¼x3½x⅜	T
15	..... 408G	.....	Opt	Opt	40000	.....	10.00/20	10.00/22	Con R6513	6–4½x5½	5135	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A62	10	T SFD154W	2F	L	** –8.43	Tim F2090W	Ws6IA	....	1302	a	TD	Opt	10½x3x¼	Tf
16	..... 50SD6	.....	Opt	Opt	50000	.....	11.00/22	₁1.00/22	Her HXD	6–5½x6	855	...	645	203–2100	7–3½x17	Y	Fu 4A86	8	T SD353W	2F	L	** –7.33	Tim F3100W	Ws6IA	....	1626	a	TD	Opt	10½x3x¼	Tf
17	Diamond T																														
18	...900SD3000PA	.....	204	204	40000	13750	10.00/22D	10.00/22	Her RXLC	6–4⅝x5¼	529	5.4	365	132–2100	7–3½x13¼	Y	Spl 6241, 703	12	T SD3000PA	2F	R	** –7.50	Tim 36021TW	Ws6IA	1082	....	A	TD	134	10¼x3½x⅄	T
19	(D) 910SW3002PA	.....	206	206	40000	15100	10.00/22D	10.00/22	Cum HB-600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spl 7851, 703	15	T SW3012PA	2F	R	** –6.07	Tim 36021TW	Ws6IA	1082	....	A	TD	124	10½x3½x⅄	T
20	(D) 910SD462W	.....	206	206	50000	16300	11.00/22D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¾	Y	Spl 7851, 703	15	T SD462W	2F	R	** –8.15	Tim 36021TW	Ws6IA	1014	....	A	TD	124	10½x3½x⅄	T
21	F.W.D. M6x6	.....	243	276	52400	▲21400	11.00/24D	11.00/24	Her HXE	6–5¾x6	935	5.5	650	198–2000	7–3½x16⅝	Y	Fu 4B86	8	Wis SD462	2F	H	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	183	10⅄x3x⅓	P
22	(D) M6x6	.....	276	276	52400	▲21800	11.00/24D	11.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16¼	Y	Fu 4B86	8	Wis SD462	2F	H	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	216	10⅄x3x⅓	P
23	International (2)																														
24	(b) K-6-F	.....	151	194	22000	6750	7.00/20	8.25/20	Own BLD250	6–3⅄x4½	251	6.3	200	100–3200	4–2¾x5⅓	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH4IHV	507	848	c	PX	77	8⅄x⅄x⅄	T
25	(b) K-8-F.4R	.....	161	215	27000	8470	7.00/20	9.00/20	Own RED401	6–4½x5	401	6.3	318	140–2800	7–3¼x10⅓	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH6IHV	705	944	c	PX	84	9¼x3⅄x3½	T
26	(b) K-11-F	.....	161	215	37000	10925	9.00/20	10.00/20	Own RED450	6–4½x5	451	6.3	360	148–2600	7–3¼x10⅓	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	TW6IA	966	....	G	PX	84	10¼x3⅄x3½	T
27	Ken- (D) 523.4R	.....	193	241	43000	14600	10.00/20	11.00/22	Cum NHB6	6–5¼x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Ti SW3012PA	WF	R	** –6.16	Tim 36000	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅄	C
28	worth (D) 524.4R	.....	193	241	54000	15400	10.00/20	11.00/22	Cum NHB6	6–5¼x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Tim SW452	WF	R	6.0 –7.6	Tim 36000	Ws4rIA	800	1192	a	TD	102	9½x3¼x⅄	C
29	..... 528.4R	.....	186	234	40000	12500	10.00/20	10.00/22	Bud L0525	6–4½x5½	525	5.5	385	135–2200	7–3x11½	Y	Fu 5A620	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅄	C
30	..... 532.4R	.....	186	234	35000	12500	10.00/20	10.00/22	Wau 6MZR	6–4¼x4¾	404	5.9	300	112–2500	7–2⅝x12½	Y	Fu 5A430	5	Ti SW3012PA	WF	R	** –6.16	Tim 35100	Ws4rIA	924	1248	a	TD	102	9½x3¼x⅄	C
31	..... (D) 548.4R	.....	193	241	54000	17000	11.00/22	12.00/24	Cum NHB6	6–5¼x6	743	17.	565	200–2100	7–4½x16½	Y	BL 7841	4	Tim SD462	DR	R	** –8.15	Tim 36000	Ws4rIA	800	1192	a	TD	109	9½x3¼x⅄	dbC
32	..... (D) 552.4R	.....	255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	BL 7841	4	Tim SD462W	WF	R	** –8.15	Tim 36000	Ws4rIA	800	1192	a	TD	168	9½x3¼x⅄	dbC
33	Marmon-Herr.																														
34	(C) ... CMM5T-6	2790	156	....	225000	6673	7.50/20D	7.50/20	Ford	8–3⅄x3¾	239	6.4	176	100–3500	3–2¼x4.71	N	Ford	..	Thornton	S	H	** –6.67	Own M5	M	503	....	a	F	82⅄	7½x3x¼	C
35	(C) ... CMM6T-6	2822	180	....	225000	6710	7.50/20D	7.50/20	Ford	8–3⅄x3¾	239	6.4	176	100–3500	3–2½x4.71	N	Ford	..	Thornton	S	H	** –6.67	Own M5	M	503	....	a	F	106¼	7½x3x¼	C
36	..... MH-555-6	.....	260	260	37000	14900	11.00/20	11.00/20	Her RXC	6–4⅝x5¼	529	6.3	390	131–2200	7–3x9¼	Y	Fu 5A620	5	Tim SD353	2B	H	** –8.15	Tim F3100W	Ws .. A	1092	1608	..	F	84	10⅄x3x⅄	T
37	Peterbilt (D) 344DT	11415	189	Opt	43000	16250	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SW3012W	WF	A	6.00– 8.5	T 36000W	Ws6IA	1212	1734	a	FD	106½	10⅝x3½x⅄	TL
38	(D) 345DT	11870	187	Opt	43000	17300	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SW452W	WF	A	6.00–10.2	T 36000W	Ws6IA	1000	1626	a	FD	106½	10⅝x3½x⅄	TL
39	(D) 354DT	11915	187	Opt	56000	17450	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SW452W	WF	A	6.00–10.2	T 27454W	Ws6IA	1000	1626	a	FD	106½	10⅝x3½x⅄	TL
40	(D) 355DT	12575	187	Opt	56000	17900	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741	12	Tim SD462W	2F	A	** –8.15	T 27454W	Ws6IA	1000	1626	a	FD	106½	10⅝x3½x⅄	TL
41	Sterling																														
42	(D) HWS160H..	.....	185	245	42000	14500	10.00/20D	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW3002PA	WF	L	** –6.16	T 26450W	Ws6IA	1160	1878	a	TX	97	9x3¼x¼	A
43	(D) RWS160H..	.....	219	232	42000	14500	10.00/20D	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW3002PA	WF	L	** –6.16	T 26450W	Ws6IA	1160	1878	a	TX	131	9x3¼x¼	A
44	(D) HDS160H..	.....	197	232	42000	15000	10.00/20D	10.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SD353W	2F	L	** –7.33	T 26450W	Ws6IA	1092	1818	a	TX	109	9x3¼x¼	A
45	(D) HWS160HS.	.....	211	232	42000	15100	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW452W	WF	L	** –6.00	T 26450W	Ws6IA	1092	1818	a	TX	123	9x3¼x¼	A
46	HCS195	.....	191	207	48000	14000	10.00/20D	11.00/22	Wau 140GK	6–4½x5½	525	6.1	403	137–2250	7–3x16¼	Y	Fu 5A625	15	Own 195W	CD	R	** –7.31	T 26450W	Ws6IA	1160	1978	a	TX	105	9¼x3⅝x⅜	A
47	(D) HCS195H..	.....	197	211	48000	15000	10.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	Own 195W	CD	R	** –7.31	T 26450W	Ws6IA	1160	1978	a	TX	109	9¼x3⅝x⅜	A
48	(D) HWS235H..	.....	195	211	52000	15500	11.00/20D	11.00/22	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 7741§	12	T SW452W	WF	L	** –6.80	T 27454W	Ws6IA	1092	1810	a	TX	107	9¼x3⅝x⅜	A
49	(D) HCS265H..	.....	178	195	60000	18500	11.00/24D	12.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86§	12	Own 265W	CD	R	10.76–15.0	T 27454W	Ws6IA	1160	2010	a	TX	90	9¼x3⅝x⅜	A
50	(D) HCS297H..	.....	178	195	70000	20500	12.00/24D	13.00/24	Cum HB600	6–4⅞x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86§	12	Own 330W	CD	R	10.76–15.0	T 27454W	Ws6IA	1280	2046	a	TX	90	9¼x3⅝x⅜	A
51	Truckstell																														
52	(C) ... F2X26.2F	.....	156	237	26000	▲5900	7.50/20	8.25/20	Ford	8–3⅄x3¾	239	6.4	176	100–3800	—2½x5¼	N	Ford	4	Ford	SF	..	** –6.67	Ford	F6IHV	502	836	c	TX	82½	7½x3x.47	CTf
53	(C) ... F2X27.2F	.....	156	237	28000	▲6450	7.50/20	8.25/20	Ford	8–3⅄x3¾	239	6.4	176	100–3800	—2½x5¼	N	Ford	8	Eat 1350	SFd	..	5.83–8.11	Ford	F6IHV	502	836	c	TX	82½	7½x3x.47	CTf
54	(C) ... F2X34.2F	.....	156	237	34000	▲8235	8.25/20	10.00/20	Ford	8–3⅄x3¾	239	6.4	176	100–3800	—2½x5¼	N	F and BL	12	Cla R1300	SF	..	5.12–6.83	Ford	F6IHV	605	1043	a	TX	82½	7½x3x.47	CTf
55	(C) ... F4X26.4R	.....	144	210	26000	▲6300	7.50/20	8.25/20	Ford	8–3⅄x3¾	239	6.	176	100–3800	—2½x5¼	N	Ford	8	Ford	SF	..	6.07–10.5	Ford	F6IHV	502	836	c	TX	63⅄	7½x3x.47	CTf
56	(C) ... F4X29.4R	.....	144	210	29000	▲7000	7.50/20	8.25/20	Ford	8–3⅄x3¾	239	6.4	176	100–3800	—2½x5¼	N	Ford	16	Eat 1350	SFd	..	7.47–12.9	Ford	F6IHV	502	836	c	TX	63⅄	7½x3x.47	CTf
57	(C) ... C2X26.2F	.....	157	234	26000	▲5800	7.50/20	8.25/20	Chevrolet	6–3⅄x3¾	235	6.6	192	93–3100	4–2¾x5⅓	N	Chevrolet	4	Chevrolet	SF	..	** –6.17	Chevrolet	C6IHV	546	780	a	2I	82¼	7½x3x.47	CTf
58	(C) ... C2X28.2F	.....	157	234	28000	▲6500	7.50/20	8.25/20	Chevrolet	6–3⅄x3¾	235	6.6	192	93–3100	4–2¾x5⅓	N	Chevrolet	8	Tim	SFd	..	5.64–8.22	Chevrolet	C6IHV	546	780	a	2I	82¼	7½x3x.47	CTf
59	(C) ... C2X34.2F	.....	157	234	34000	▲8285	8.25/20	10.00/20	Chevrolet	6–3⅄x3¾	235	6.6	192	93–3100	4–2¾x5⅓	N	C and BL	12	Cla R1300	SF	..	5.12–6.83	Chevrolet	C6IHV	615	1043	a	TD	82¼	7½x3x.47	CTf
60	(C) ... C4X26.4R	.....	145	212	26000	▲6120	7.50/20	7.50/20	Chevrolet	6–3⅄x3¾	235	6.6	192	93–3100	4–2¾x5⅓	N	Chevrolet	8	Chevrolet	SF	..	6.41–11.1	Chevrolet	C6IHV	546	780	a	2I	63⅜	7½x3x.47	CTf
61	(C) ... C4X29.4R	.....	145	212	29000	▲6880	7.50/20	8.25/20	Chevrolet	6–3⅄x3¾	235	6.6	192	93–3100	4–2¾x5⅓	N	Chevrolet	16	Eat 1350	SFd	..	7.47–12.9	Chevrolet	C6IHV	512	836	a	TD	63	7½x3x.47	CTf

§ Equipped with 3 speed auxiliary transmission. ▲ Includes cab. † With Power Take-off. * Vehicle Price.



Protect Perishables—Keep Windows Clear —Get Quick Starts in Cold Weather— Make Drivers Safer, More Efficient with the WORLD'S FINEST Truck Heater That Doesn't Depend on the Engine

A FEW QUICK FACTS

- Maximum heat output of 20,000 BTU's per hour.
- Hot heat quick—in less than a minute.
- Works independently of the engine.
- Can be used to warm up engine for easier starting.
- Delivers more than 100 cubic feet per minute of warmed fresh air.
- Unique modulating flow temperature control device "anticipates" temperature changes—adjusts heater operation to maintain pre-selected temperature in the truck or trailer.
- Prevents fogging and frosting of windshield and windows.
- Burns gasoline from the fuel pump in a patented sealed metal chamber—the famous South Wind "sealed flame" principle.
- Always ready for use. Need not be disconnected in summer.

• It's a brand new kind of truck and trailer heater—road tested and proved—developed out of South Wind's experience in tanks, PT boats and airplanes.

You can operate this revolutionary heater independently of the truck engine—in fact you can use it to help start the engine in cold weather. Its precision automatic temperature control—which you can set and forget—will protect your perishable cargo—will keep your drivers comfortable and efficient. More than 100 cubic feet per minute of warmed fresh air will keep cab windows free from fog or frost all around.

There are many possible types of installations to meet a variety of conditions. If you have a truck or trailer heating problem, discuss it with our engineers. No obligation. Just write to South Wind Division, Stewart-Warner Corporation, Indianapolis 7, Indiana.

Another Product of STEWART WARNER

South Wind

REG. U. S. PAT. OFF.

DELUXE TRUCK HEATER

CCJ NEWSCAST

ATA SETS MEETING DATES

The annual trucking convention of the American Trucking Assns. will be held October 5 to 9 in the Sherman Hotel in Chicago, according to Ray G. Atherton, general manager of ATA. Those who expect to attend should make arrangements early, as the Sherman has been able to guarantee only 600 rooms although it has promised to attempt to arrange for additional rooms elsewhere. Mr. Atherton said that an attendance of 1200 to 1500 could be handled by planning early.

The annual spring meeting of the Safety Operations Section of American Trucking Assns. will be held May 27 to 29 in Cleveland. The Freight Claim Section will convene with a meeting of freight claim association officials on May 25, and the National Committee for the Freight Claim Section will meet the next day. Members of the trucking industry planning to attend these sessions should make hotel reservations early.

TRAINING COURSES SCHEDULED

The schedule of fleet training courses for 1946 has been announced by the Institute of Public Safety. A list of the colleges offering these courses and the dates of the instruction follow:

University of Oklahoma	April 1- 5
Boston University	April 15-19
West Virginia (School to be announced)	April 29-May 3
Iowa State College	April 29-May 3
University of Wisconsin	May 6-10
University of Michigan	May 13-17
Northwestern University	May 20-24
Montana State College	June 3- 7
University of Utah	June 10-14
Wyoming-Casper Junior College	June 17-21
Denver University	June 24-28
Oregon State College	Aug. 12-16
University of Washington	Aug. 19-23
Pennsylvania State College	Sept. 9-13
Georgia School of Technology	Sept. 23-27
Ohio State University	Oct. 14-18
Purdue University	Oct. 14-18
New York University	Oct. 21-25
Vanderbilt University	Oct. 28-Nov. 1
University of Florida (Date tentative)	Nov. 18-22

POLICE TO CHECK TRUCKS

A program for the Traffic Safety Check for 1946, which is to be launched after May 10, has been announced. As in the Brake Program, only drivers who have been stopped for traffic violations will have their cars checked. However, this year trucks and buses will be checked in addition to passenger cars. The officers will check the following items: Driver's license, brakes, horn, windshield wiper, lights, tires.

BURKE HEADS TUCKER SALES

Joseph D. Burke, formerly Dodge truck sales manager, has been named vice president in charge of sales of the Tucker Corp., an organization preparing to manufacture a new rear-engine automobile.

(TURN TO PAGE 105, PLEASE)

J. R. Rose, left, is the newly appointed assistant sales manager of the Automotive Equipment Division of the Wagner Electric Corp. H. H. Brandenburger, right, was promoted at the same time to manager of the Automotive Parts Division of the company

THIS
SAF-T-STEP
makes the job faster..easier!
No more dangerous and exhausting jumps or climbs when you load and unload! With Saf-T-Step you walk up to your truck bed with the load you carry adjusted for ease and minimum strain. Saf-T-Step cuts fatigue in half and makes the job go faster. Constructed to carry a 1000 pound load Saf-T-Step has a special non-skid feature on step treads. Saf-T-Step is available in 2 models, designed for side or rear mounting and fits most flatrack, stakebody, van trailer or "semi" bodies with custom-like precision.
OR THIS
SAF-T-STEP IN ACTION!
Inset shows Saf-T-Step in closed position. Folds directly under truck bed, has easy . . . finger-tip release that drops the step into working position automatically.
WRITE FOR DETAILS
SAFETY STEP SALES CO.
1017 S. La Brea Ave. Los Angeles 35, Calif.

CCJ NEWSCAST

(CONTINUED FROM PAGE 102)

KENTUCKY UPS WEIGHT LIMITS

A bill lifting the vehicle weight limitation from 18,000 to 42,000 lb. in the state of Kentucky was signed by the governor. The bill brought Kentucky into practical conformity with other states on vehicle sizes and weights. A study of truck taxes will be made by the Highway Department.

CONNECTICUT REVISES LIMITS

War-liberalized truck size and weight limits which had been in effect since May of 1942 were suddenly canceled by the Connecticut Public Utilities Commission recently. This means that henceforth, unless special permits have been obtained, the maximum length of any vehicle or combination of vehicles permissible on Connecticut highways may not exceed 40 ft. and the maximum gross weight may not top 40,000 lb. Under wartime regulations carriers were permitted to use equipment up to 45 ft. in length and up to 48,000 lb. in weight.

CARRIER RATES TOO LOW

"If the motor carrier industry is to survive in the Midwest, or elsewhere, its rate structure must permit carriers to receive revenue at rates compensatory for the service in which they engage," said Ellis T. Longenecker, Federal Manager of Motor Carrier Transportation System and Properties in a cost study made public recently.

Mr. Longenecker said that where the total of all charges of a group of principal carriers of a region is insufficient to return the total of all expenses of operation, it is evident that some rates are not compensatory. He stated that a primary cause of such conditions in the Midwest area is the practice of fixing particular rates without proper study of costs. Rate adjustments effective since December, 1944, have improved revenues to some extent, he said, but the problem of securing for the group of carriers sufficient revenue to permit the consistent performance of satisfactory services has not yet been solved.

Lt. Gen. Levin H. Campbell, Jr., Chief of Ordnance of the U. S. Army, retired on Fab. 13 to become vice president of the International Harvester Co.

Marvin F. Thoroughgood has been appointed West Coast regional representative for the Timken - Detroit Axle Co. He will handle sales and service in California

SURPLUS TIRE CHAIN SALE

Fifteen thousand pairs of new surplus tire chains now are being offered for sale by the Philadelphia and Cincinnati regional offices of the War Assets Corp. The retail ceilings, which became effective February 2, are $11 a pair for size 7.50 x 16; $20 a pair for size 10.50 x 18 and $30 a pair for size 14 x 20.

NEW SAFE DRIVING FILM

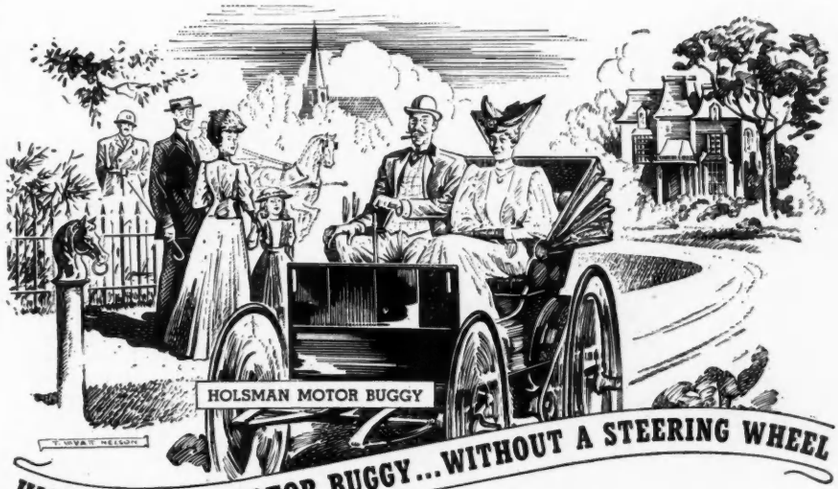
The National Safety Council has just completed a new sound slide film entitled "P.U.D. Driver Wins Again," a film which depicts a typical day in the life of a pick-up and delivery truck driver and the way he avoids accidents.

Further information may be obtained from the National Safety Council, Inc., 20 North Wacker Drive, Chicago 6, Ill.

IHC BRANCH APPOINTMENTS

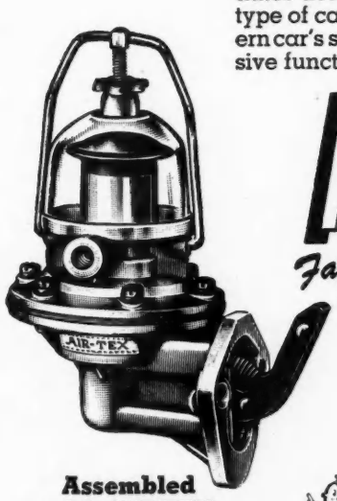
The International Harvester Co. has announced the following changes in branches and in branch management personnel: Separate motor truck branches have been established in San Antonio and Houston, Tex. They will handle motor truck sales, parts and service exclusively. T. R. Moulder has been named manager of the San

(TURN TO NEXT PAGE, PLEASE)



HIGH-WHEELED MOTOR BUGGY... WITHOUT A STEERING WHEEL

As late as October, 1908, an automobile manufacturer contended that "all roads are made to be traveled by high wheels" and built his autos accordingly. But time proceeded to evolve the type of car that suits the modern need. And the modern car's sensitive throttle is best served by the responsive functioning of . . .



AIRTEX

Factory Tested FUEL PUMPS

The purity and high quality of the alloy used in AIRTEX cover and body castings prevent warpage and assure uniformity, accuracy and lasting strength. Our modern high pressure casting machines prevent porous castings. All other parts are made with the same thorough care; tolerances on some parts must be as close as one to two thousandths of an inch. All parts are assembled accurately, carefully inspected and the diaphragm assembly is tested for absolute gas-tightness.

Assembled with AIRTEX Diaphragms Guaranteed for 50,000 MILES

"Your profits climb with the AIRTEX Line"

AIRTEX AUTOMOTIVE CORPORATION, FAIRFIELD, ILL.

CCJ NEWSCAST

(CONTINUED FROM PAGE 105)

Antonio branch, and C. T. Helin will manage the Houston branch, with E. M. Moore as his assistant.

M. J. Gowen has been made manager of the Richmond, Va., motor truck branch; L. C. Carroll replaces Mr. Gowen as assistant manager at the Cincinnati branch, and C. V. Ellis has been transferred from the Topeka branch to the Kansas City branch as assistant manager.

WANT BIGGER TANK TRUCKS

The trend toward larger truck sizes for retail deliveries of fuel oil has been further accelerated in the disclosure of the purchase intentions of fuel oil retailers for 1946. A study, made by the Fueloil & Fuel Heat, New York City, showed that only 16 per cent of the tank trucks which dealers will buy in 1946 will be of less than 1000 gal. capacity. A study of the tank truck sizes in use in 1939 showed that 65 per cent of the trucks were under 1000 gal. capacity.

According to the study, 42 per cent of the new trucks will be of 1500 gal. capacity and 42 per cent will be in the 1000 to 1500 gal. class. The report further reveals that miles per truck averaged 13,086 in 1945, as compared with 11,618 in 1944.

MASON HEADS AMA

George W. Mason, president of Nash-Kelvinator Corp., has been elected president of the Automobile Manufacturers Assn. He succeeds Alvan Macauley, chairman of the board of Packard Motor Car Co., whose resignation as president of the manufacturer's organization after an 18-year tenure was accepted by the organization.

ATA PETITIONS ICC

A petition by the American Trucking Assns. to the Interstate Commerce ommission calling for revision of the Commission's uniform system of accounts as applied to large common carriers of general freight has been approved by a special trucking industry committee. However, the committee appended to the approval a provision that the ICC consider excluding carriers rendering diversified services so as to allow them to limit the increased accounting detail involved to reporting only on hauling of general commodities.

GENERAL TIRE SHIFTS STAFF

The General Tire & Rubber Co. has announced a reorganization of key personnel. F. D. Gillen will direct sales of motor truck, trailer, airplane and industrial equipment to manufacturers. F. R. Eyer will manage national account sales. Robert Moran has been transferred from the stock control department to truck tire sales.

(TURN TO PAGE 108, PLEASE)

PRACTICAL DAN SAYS:
"HERE'S ANOTHER LABOR-SAVER"

The Kleer-Flo CARB-U-TATOR

The *Kleer-Flo* CARB-U-TATOR Sr., for quick—thorough cleaning of carburetors, fuel pumps, hydraulic brake and similar parts, tough jobs that do not react to milder methods, in 15 to 30 minutes.

Turbulence is produced by metered air-action, with regulating-valve control, subjecting parts to constant action of working fluid with greatly increased scrubbing effect.

AUXILIARY TO ALL *KLEER-FLO* MODELS OR FOR BENCH USE

Kleer-Flo HI-T CARBUSOL

An especially developed cleaning compound for removing carbon, gummy residues, paint, analine dyes, varnish, "caked" dirt, grease and oil from automotive parts and metallic assemblies. A cold cleaner, non-toxic, non-evaporating, not injurious to metal. Recommended for use in *Kleer-Flo* CARB-U-TATOR. Write for details.

Kleer-flo
Practical Products Company
MANUFACTURERS OF MECHANICAL PARTS CLEANERS, CLEANING COMPOUNDS, KOOL-ANT PUMPS
2632 NICOLLET AVENUE • MINNEAPOLIS 8, MINNESOTA

D. N. Miller has been appointed divisional sales manager for Trailmobile, responsible for sales and service operations throughout Michigan, Indiana, Ohio, Western Pennsylvania and Western New York

Fred H. Kroeger has joined the Bendix Products Division, Bendix Aviation Corp., South Bend, Ind., as district manager in the Service Sales Division

James F. Bleakley, newly appointed vice president in charge of production for the Shuler Axe Co., Louisville, Ky.

"Costs count with us!"

"Sure thing, dependability and safety take a number one spot in selecting a brake lining, but costs count, too! We maintenance men are looking for sure, safe stops—at the lowest cost per stop."

Maintenance men, responsible for the economical maintenance of America's great fleets of trucks and buses, agree that American Brakeblok Heavy Duty Brake Lining answers their problems. For good reasons, American Brakeblok is original equipment on the majority of trucks and buses.

There are types of American Brakeblok Heavy Duty Lining designed for greatest economy with all kinds of braking systems under all operating conditions. However, American Brakeblok linings are made in only one quality—the best!

Across the country—for smoother, safer stops—for low maintenance costs—drivers, maintenance men and manufacturers prefer American Brakeblok.

Stopper says –

"Call on American Brakeblok's Free Advisory Service for the most economical solution to your braking problems."

American Brakeblok

TRADE MARK REG. U.S. PAT. OFF.

HEAVY DUTY BRAKE LININGS

NAPA Assurance of Quality

Speedy delivery of American Brakeblok products from 38 strategically located warehouses and jobbers everywhere.

AMERICAN Brake Shoe COMPANY

AMERICAN BRAKEBLOK DIVISION • DETROIT 9, MICHIGAN

CCJ NEWSCAST

(CONTINUED FROM PAGE 106)

LEMPCO ADDS NEW LINE

Lempco International, Inc., has added another line to its automotive replacement parts by the acquisition of Kar Power Products Co. of New York City, manufacturer of battery cables, hose clamps, spark plug wire sets, charger bulbs and solder.

PYRENE DROPS TRADE NAMES

The Pyrene Mfg. Co., Newark, N. J., has discontinued the use of 11 established trade names of as many types of fire extinguishers and compounds in favor of one trade name and more informative labeling. The names of the various types of fire extinguishing compounds and equipment were not easily distinguishable to users in emergencies. Now name plates have been completely redesigned for quicker identification and more legible instructions for use have been added.

NEW MANUAL ON ICC ORDERS

The National Council of Private Motor Truck Owners, Inc., has prepared a loose-leaf reference manual covering all ICC regulations applicable to the interstate operation of private trucks. The manual has been designed to acquaint private truck owners with all of their obligations and liabilities under the Interstate Commerce Act as administered by ICC and to provide a means for keeping up to date on such information required by federal regulation of private truck operations. The manual is being made available to anyone interested at a yearly subscription charge of $7.50 per copy.

WHEELER ELECTED PRESIDENT

Wilmot F. Wheeler has been elected president of the American Chain and Cable Co., Inc., of Bridgeport, Conn. He succeeds the late William T. Morris. Mr. Wheeler has been executive vice president and treasurer of the company since 1936.

Cyrus F. Johns becomes the new executive vice president of the company, and Stanley Mann assumes the position of treasurer.

CREAMER HEADS WHEEL & RIM

John F. Creamer of Wheels Inc., New York, was elected president of the National Wheel and Rim Assn., at the 22nd Annual Meeting held recently in Chicago. The other officers are Fred W. Dennerline, Indiana Wheel & Rim Co., Indianapolis, vice president and H. M. Young, Borbein-Young & Co., St. Louis, treasurer.

(TURN TO PAGE 228, PLEASE)

Edwards gets the Preference

From More and More Fleet Owners Because of Low Maintenance Costs and Long Life

• Large fleets of Edwards semi-trailers have grown from the satisfactory performance of a single original Edwards. Today Edwards is the choice of an increasing number of truckers because:

Edwards tried and proved engineering principles mean trailers of longer life and dependability.

The expert craftsmanship in every Edwards means lower maintenance costs on the job.

Investigate Edwards before purchasing your next trailer. Write today for facts and prices.

EDWARDS IRON WORKS, INC., SOUTH BEND, INDIANA

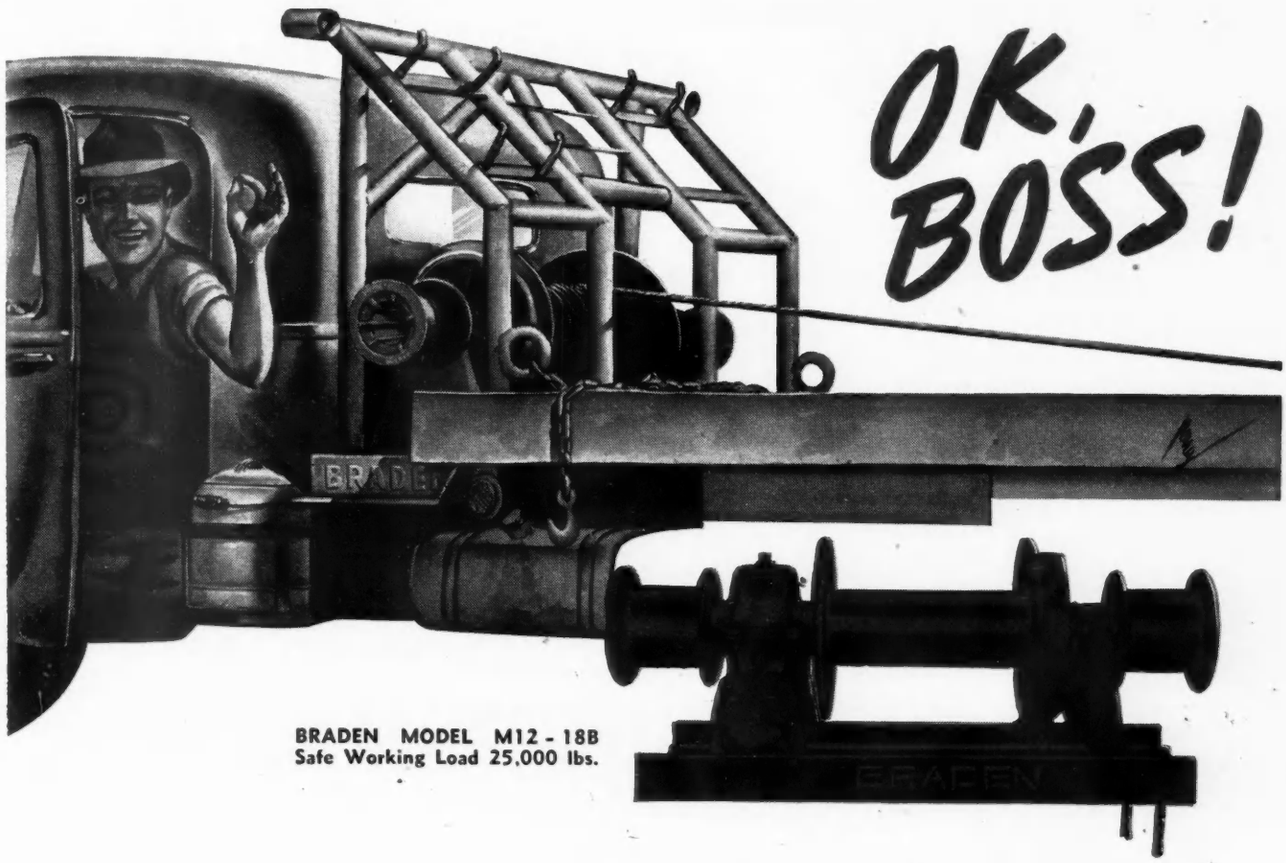
EDWARDS SEMI-TRAILERS

Randall W. Richards, Jr., manager of the new factory-owned New Haven branch of Reo Motors, Inc., Lansing, Mich.

J. L. Glick, of Truck Engineering Corp., Cleveland, Ohio, is the new president of the Truck-Trailer Manufacturers Assn.

L. C. Pursell becomes sales manager of the Eastern Division for The Trailmobile Co., Cincinnati, Ohio

E. C. Van Horn has been appointed manager of the enlarged service parts department of Kenworth Motor Truck Corp., Seattle, Wash.



BRADEN MODEL M12 - 18B
Safe Working Load 25,000 lbs.

"O K, boss" is what operators say when asked about the actual, on-job performance of any Braden Truck Winch. They know they can rely on the ruggedness and safety of Braden Winches on any handling job.

All Braden Winches are equipped with Timken Tapered Roller Bearings, and are designed with safety features that make them the safest truck winches in operation today. The *new* OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC BRAKE, an exclusive Braden safety feature, enables the operator to keep a suspended load always under perfect control.

Ask your nearest truck dealer for complete information about the entire line of Braden Truck Winches, ranging in rated capacities from 6,000 pounds to 100,000 pounds . . . or write direct to the factory.

"Buy BRADEN . . . They Are SAFER"

BRADEN WINCH COMPANY
1001 East Admiral Boulevard

BRADEN Winches

TULSA 3, Oklahoma

A Report on Visits to 133 Fleets in Seven States

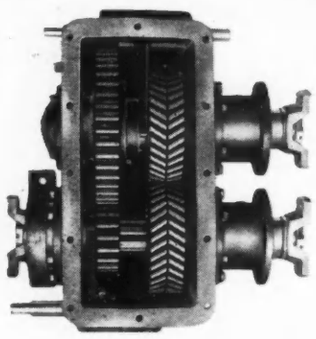
by CHARLES B. RAWSON

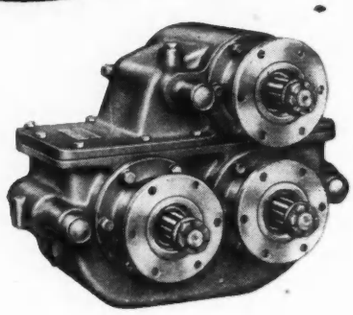
Assistant Editor, Commercial Car Journal

DURING a recent five-week tour the writer had the opportunity of visiting 133 fleet operators in seven southern states for the sole purpose of seeing what went on in this postwar period among the brothers south of the Mason-Dixon line. As the stops drew no line for size or type, and as over 10 trucks was considered the low limit, the fleets visited ranged all the way from huge for-hire carriers with shops and terminals stretched half across the nation to little private fleets operating from tiny shops sometimes air-conditioned only by the changing whims of the elements.

From our vantage point it was amazing to note the ways and means of accomplishing the same common goal—keeping them rolling at minimum cost. But they were all doing just that despite the books still being thrown their way in the form of labor shortages, parts shortages, tire shortages and new equipment shortages that made the transition from war to peace merely a spot on the calendar for most of them.

DELIVERS FULL ENGINE TORQUE





The Fabco Power Take-Off, illustrated at the right above, was designed especially for those applications which require a minimum wheel base, and where the power necessary exceeds the requirements of conventional take-offs mounted on the side of the main truck transmissions.

The Fabco Power Take-Off is mounted atop the Fabco Dual Drive Power Selector shown at the left. It consists of a special casting incorporating the take-off gears, shafts and bearings and replaces the standard transfer case cover. One model of the take-off delivers full engine torque at engine speed with outlet shaft running in engine rotation. A second model provides a reduced speed of 428 r.p.m. per 1000 engine r.p.m. A third model provides the same reduced speed but in opposite engine rotation.

Especially desirable in powering truck mounted compressors, generators, drilling rigs, and cranes—"power towers" installed in conjunction with Fabco Dual Drives can be used either "standing" or "walking."

26 Years in this Business

Fabco

F. A. B. MANUFACTURING CO.

1249 SIXTY-SEVENTH STREET · OAKLAND 8, CALIFORNIA

Dual Drives · 6 and 10 Wheel Units · Logging and Highway Trailers · Frame Extensions

New Equipment Scramble

IT WAS everywhere apparent, nonetheless, that the war had taken its toll. Some fleets restricted in size by ODT directives, others admittedly held together with bailing wire and welded joints, headed the list of fleetmen crying for new vehicles. We do not recall a single fleetman anywhere who was not on someone's waiting list, although there were a few who had taken the bull by the horns, said to hell with standing in line in a seller's market, and were rebuilding their fleets literally from the ground up. Nearly all were planning on keeping a good many of their older vehicles on hand to fill the crying need for "spares."

Almost as universal were the queues of fleetmen waiting for new shop equipment. Heading the lists were such items as lathes, lifts, air compressors, valve refacers, line reamers, drill presses and hosts of portable tools, but hardly excluded was a single piece of any type equipment one could mention. While some of this equipment had been coming through in recent months, the fertility of the market was everywhere apparent.

New Shops in the Wind

WE NOTED frequent evidence of long-range, progressive action in the form of plans for new shops. Ten of the fleets visited had reached the blue print stage, expected to build within the next six months. Another four were already using new shops completed within the last 12 months, and three more were currently building. One rather large fleet took an extra share of wartime troubles by being forced out of a remarkably complete new shop when the whole building was requisitioned by a government agency just eight months after the fleet had moved

(TURN TO PAGE 112, PLEASE)

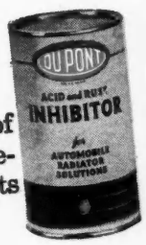
AVOID RADIATOR TROUBLES

Rust ruins radiators

1 Clean rust out of the radiator with DU PONT COOLING SYSTEM CLEANSER

This simple precaution now, will probably eliminate trouble later. DU PONT COOLING SYSTEM CLEANSER actually dissolves rust, scale and grease. Cleans thoroughly without reverse flushing. Won't damage hose, packing or metal parts. Saves gas, insures against overheating.

2 Keep rust out with DU PONT ACID AND RUST INHIBITOR



After cleaning out the cooling system, pour in a can of DU PONT ACID AND RUST INHIBITOR. This prevents rust forming—prevents acid, too. One can lasts all season.

3 Make the cooling system leak-proof with DU PONT COOLING SYSTEM SEALER

You can keep the cooling system free from leaks by pouring in DU PONT COOLING SYSTEM SEALER. Will not clog the radiator or harm the parts.

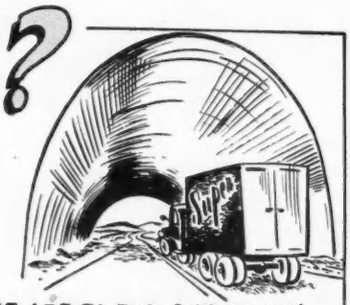
DU PONT
REG. U.S. PAT. OFF.

NO. 7 LINE

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

WHAT IS IT?

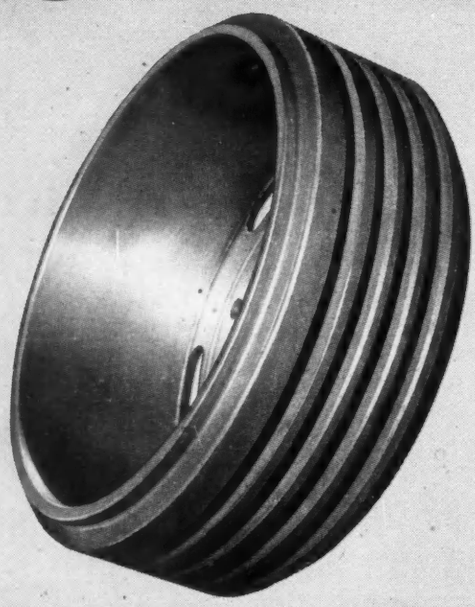
A TRUCK DRIVER WITH "TUNNEL VISION" HAS DIFFICULTY PERCEIVING OBJECTS....



☐ THAT ARE IN THE DARK ☐ THAT ARE TO THE SIDE OF HIM
☐ THAT ARE COLORED ☐ THAT ARE FAR AWAY

Answer on Page 116

GUNITE



BRAKE DRUMS

SAVE MONEY FOR YOU

GUNITES will reduce operating costs because they have *proved* their ability to lengthen lining life, reduce frequency of brake adjustments, eliminate breakage, substantially reduce drum service and replacement, and materially improve efficiency of operation. The material and design of Gunite Brake Drums are specially engineered to produce these outstanding advantages. Buy GUNITES — *for better braking!*

MADE BY GUNITE FOUNDRIES ROCKFORD, ILLINOIS

GUNITE BRAKE DRUMS . . . FOR TRUCKS, TRACTORS, TRAILERS and BUSES

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 110)

in. The desperate situation of one newspaper and film delivery fleet was graphically portrayed by a recent ad in the Charlotte (N. C.) Observer begging for temporary shop space until a new building was completed.

Parts Shortage Acute

ALTHOUGH parts had been scarce throughout the war, December, January and February drew new and discouraging lows in this commodity. Again the ways and means of coping with this drought were varied and interesting. It seemed that there was not a large fleet operator anywhere who didn't know just about to a "tee" what every other fleetman in town had cached away in his inner sanctums. In all the new shop plans, incidentally, there seemed to be provision for a regular stock room, and then somewhere near or far, a secondary spot that was sacred hiding ground for hard-to-get items. Interfleet borrowing, nonetheless, had assumed a great new role.

Then let us not forget the importance of the universal lathe on which parts of amazing intricacy have been shop-fabricated; or the electric and acetylene welding outfits, now universal in nearly every shop, with which parts from brake rods to fenders to engine blocks were put back in shape; or even the simple expediency of driving an aching rear-end far beyond normal life expectancy with the help of reduced speeds, careful adjustments, good lubrication and a set of ear muffs.

Gripes, New & Old

AS THIS was a see-all, hear-all sort of tour, we should not pass up the chance to air a universal fleetman's gripe, prewar, war and postwar ascending in that order. It's about the parts man who says over the telephone "Nope, we haven't got it" and hangs up. It was everywhere apparent that many a future sale had been lost in the oft-repeated use of those five words with no effort on the part of the supplier to follow up or help out.

On the brand new side of gripes, we noted a number of fleetmen who were experiencing valve trouble they never had during the war and which they attributed, without positive proof, to the higher octane rating of the new gasolines. In most cases it was the intake valve that burned. (Note: When we got back home, we checked up on this,

(TURN TO PAGE 114, PLEASE)

MORE POWER TO YOU WITH *FULL POWER!*

TOMORROW'S RINGS TODAY

A different type ring for each groove — each ring has its job and does it—delivers **FULL POWER.**

When you install Moog X-Plus Piston Rings you give your customers FULL POWER results. That means more power to you in your business — more success — more satisfied customers. The modern new style design of X-Plus is a business builder that is geared to 1946 methods.

Write us for the FULL POWER Story today.

MOOG INDUSTRIES, Inc.

MOOG PISTON RING CO. ST. LOUIS SPRING CO.

MOOG COIL ACTION PARTS COMPANY

General Offices: 6650 EASTON AVE., ST. LOUIS 14, MO.

Warehouses in principal cities

COPYRIGHT 1946 — MOOG INDUSTRIES, Inc.

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 112)

found the condition somewhat prevalent and found that corrective studies were in progress.)

The labor situation had been acute. Probably the biggest single gripe among the private operators, and shared by a large degree of the for-hire carriers was the scarcity of experienced mechanics. The prewar men had either gone off to war, or been lured away from their pay-frozen jobs by the wartime payrolls of shipyards or other defense industries. A second, but not nearly so universal a problem, centered in the quality of drivers whose economic independence made their cooperation in reporting vehicle deficiencies and the enforcement of safety programs extremely difficult, to say nothing of the carelessness with which many vehicles were handled.

GI Mechanics a Problem

THE MECHANIC problem was beginning to ease with the return of many veterans with prewar automotive experience. Unfortunately, however, a number of operators had had relatively poor luck with army and navy trained mechanics, both automotive and aviation, for the principal reason that most of these had either too little or, strangely, too much training. By the latter is meant the prevalence in military circles of centralizing maintenance into huge overall depots where each mechanic is trained to do a specialist's job, but knows deplorably little about the other phases of maintenance. A few shops, large enough to use these specialists, have had reasonably good success.

To help those returning G.I.'s really dig in and learn the trade-a very interesting apprentice training program has been set up in Richmond, Va., through the cooperation of local automotive men and state and Federal governments. Details of this plan are set forth elsewhere in this issue.

Scattered Fleet Headaches

AT LEAST 15 of the fleets visited had widely scattered operations. Almost universally each of these operators felt that his particular problem was different from the others, and in some cases it was. The ways and means of handling maintenance in these fleets was almost as varied as the total number. A few significant facts, however, stood out. Wartime experience in most cases had shown more than ever that dependence on outside service was an expensive headache, even for such simple operations as road tire service. One operator in New Orleans had contracted for such a service, found his contract suddenly restricted to the city limits. When he found he had to keep a service car ready for the distant calls, he found it more economical to handle city calls also.

Wherever the fleet was scattered in such a way that it could be grouped to within, say, 20 miles of centralized points, there was a definite trend to establish branch shops, even if the lone mechanic on duty was on a part-time basis. That way, at least, the fleetman knew where he stood. In other cases, where this plan appeared impossible, the scattered units were usually consigned to a specific repair shop or dealership where all maintenance was performed, and the monthly statement rendered direct to the central office.

One man, so fed up with long distance calls from his drivers such as: "The local shop here tells me I have

(TURN TO PAGE 116, PLEASE)

Introducing

"SANDY" ELSTON

HOWDY TRUCK OWNERS!

Being a thrifty man I am not going to waste words. My regular job is to keep you informed on ways to save time and trouble with Elston Electric Sanders.

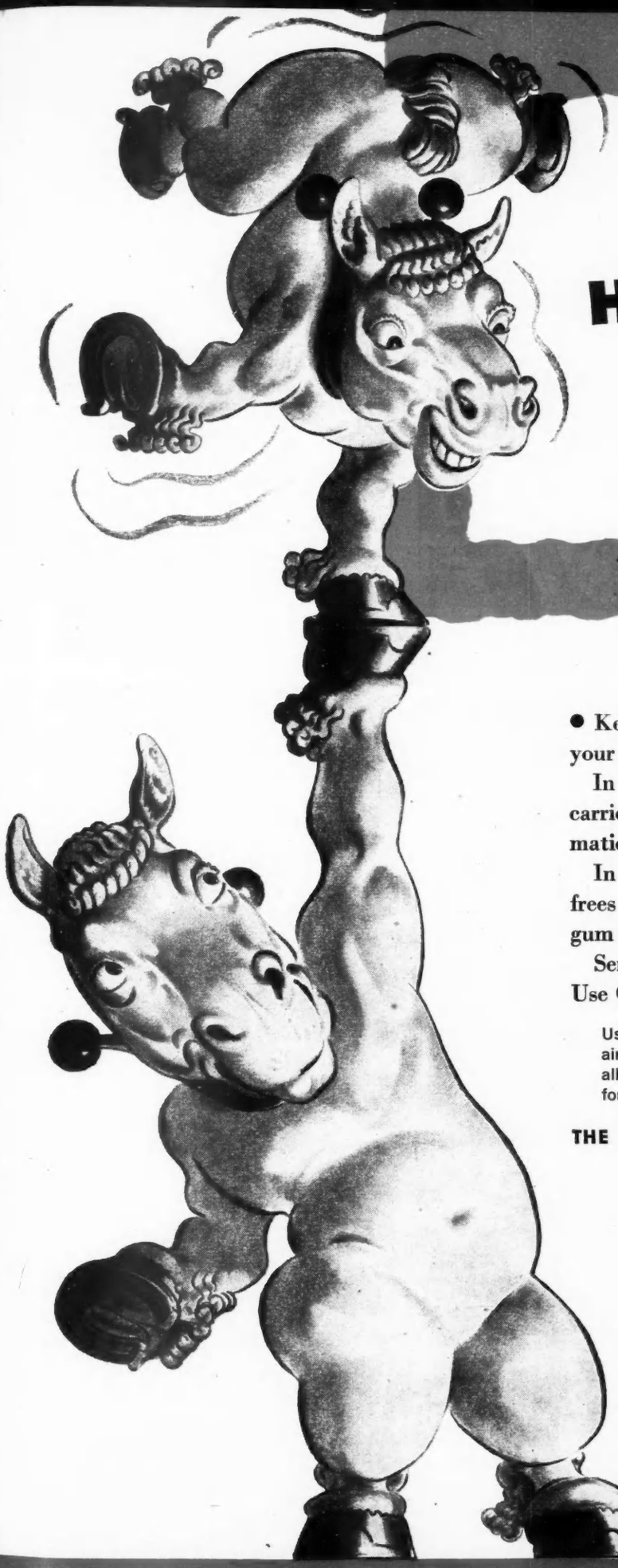
However, I've a special assignment today . . . a really important one. It is a pleasure for me to tell you that . .

NEW IMPROVED MODELS
of Elston Electric Sanders

WILL SOON BE READY
Watch for Announcement

ELECTRIC ELSTON SANDERS

HIGHWAY SAFETY APPLIANCES, INC.
Manufacturers of Elston Electric Sanders
2429 University Avenue · St. Paul 4, Minnesota



KEEPS HORSEPOWER STRONG

• Keep your new motors clean and powerful . . . give your old motors new life again . . . with Casite.

In a new motor, Casite assures proper break-in . . . carries oil quickly to the tight spots . . . retards formation of sludge.

In an older motor, Casite gives a speedy tune-up . . . frees sticking valves and rings . . . reduces power-killing gum deposits . . . improves lubrication.

Send fleet efficiency up . . . maintenance costs down. Use Casite—all the time.

Use Casite in the crankcase every oil change and through the air intake of gasoline motors every three months—a pint for all passenger cars and small trucks; 10% of crankcase capacity for all others.

THE CASITE CORPORATION • HASTINGS, MICHIGAN

CASITE

GIVES BETTER • SMOOTHER PERFORMANCE ALL-YEAR-ROUND

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 114)

a badly twisted left frame," then discovering that all that was needed was a new rear spring, now makes all road service calls himself, up to 100 miles from his centralized shop, and of course does everything in his power to prevent such calls. In that particular fleet preventive maintenance was tops.

The old expediency of employing a travelling mechanic, driving a well-equipped service truck from point to point where remotely located vehicles were quartered, was noted in a very few instances. Many believed in the principle of this type of service, but stated that the limiting factor was their inability to secure the caliber of man needed for this on-his-own type duty, or to exert proper control, after such a man had been discovered.

Maintenance Varies

VARIATIONS in degree of maintenance was an interesting subject and it was noted that the degree of maintenance performed was in direct proportion to the amount of shop equipment on hand. With the exception of the very few who farmed out all their maintenance, all had some form of preventive maintenance plan which included engine-tune-up, replacement of accessories, brake adjustments and reline, minor body and fender repairs, etc. Admittedly some had been forced to slack off on the regularity of these periodic checks due to shortages of labor and the necessity of keeping everything they had rolling, but universally they were returning to definite PM schedules as soon as conditions permitted. Virtually all also rebuilt their own engines, including installation of cylinder liners, but not reboring.

To accomplish these tasks nearly 100 per cent had on hand these basic pieces of shop equipment: air compressor, chain hoist or crane, valve seat grinder, garage jack, electric drill and drill press, bench grinder, acetylene welder, battery charger, brake lining riveter, and all necessary hand tools.

About 50 per cent also listed a valve refacer, a ridge reamer, an adjustable reamer, an arbor press, an engine stand or portable work bench, electric welder, and a good general purpose shop lathe.

Maintenance & Equipment

THREE fleets in the 40 to 60 bracket and two in the over-100-vehicle class had their own boring bars, and all were completely sold on the value of this equipment, claimed that it paid for itself in from 18 to 36 months.

Two common carriers had their own dynamometers, one a chassis type, the other an engine test type. Both considered this equipment the heart of their shops, and particularly in the case of the chassis type, cited innumerable advantages. Road service calls of the operator with the chassis-type dynamometer have numbered two in the past 12 months. Certainly a record for

(TURN TO PAGE 120, PLEASE)

● WHAT IS IT?

ANSWER

(To Question on P. 112)

People with tunnel vision, also called barrel vision, cannot see objects at an angle to their direct line of vision or out of the corner of their eyes. A truck driver with tunnel vision is like a horse with blinders.

Assured meshing of the starter pinion with the flywheel gear is essential for quick, sure starting and Bendix* has accomplished this with its Barrel-Drive construction.

This unique and exclusive construction protects the triple threads from exposure to oil, clutch dirt and other foreign matter. It permits the smallest possible pinion to work directly on the armature shaft thus providing maximum cranking efficiency with the minimum number of teeth.

For quick identification and your protection, the Barrel and other Bendix Starter Drive parts are packed in the well-known blue and white Bendix boxes.

Remember—the name Bendix is your assurance of durable construction and customer satisfaction.

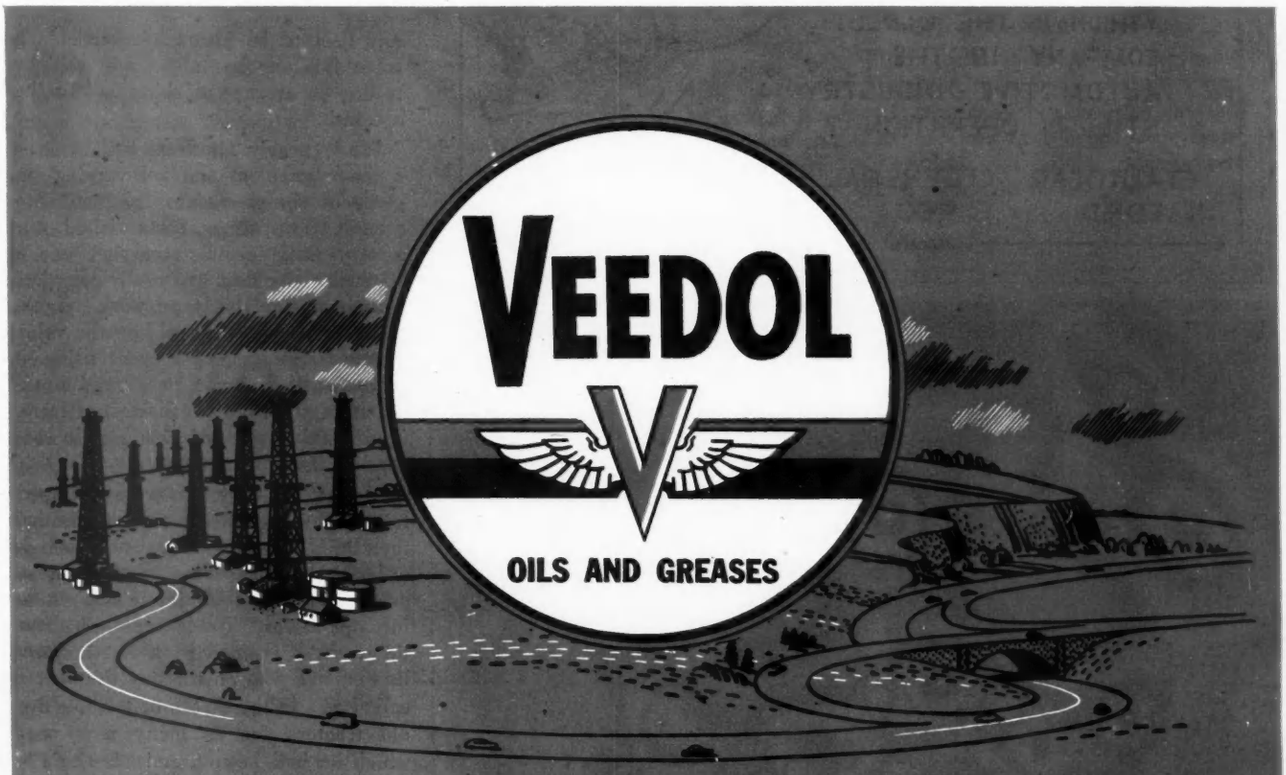
*REG. U. S. PAT. OFF.

Bendix Drive

PRODUCT OF Bendix AVIATION CORPORATION

ECLIPSE MACHINE DIVISION, ELMIRA, NEW YORK

. . . but not for this oil!



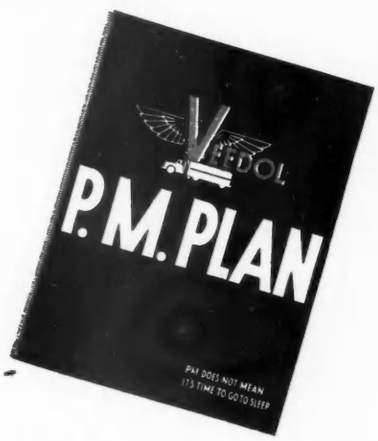
The Oil of the Future . . . here Today!

IT'S DETERGENT. Keeps engines clean by minimizing sludge and gum formations, keeps piston rings and valves free.

IT'S DISPERSIVE. Keeps gum and sludge as well as particles of soot in suspension—all of it is actually drained off with the oil.

IT'S ANTI-CORROSIVE. Has great oxidation resistance, assuring protection of the newer alloy bearings used in heavy duty vehicles.

"Cleans as you drive!"

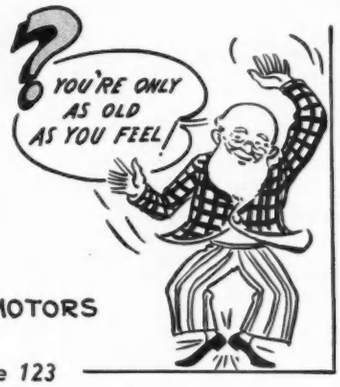


Send for the Veedol P.M. Plan, too!

The Veedol Preventive Maintenance Plan, successful with over 800 fleets, can help yours. The Plan fits any number of units—costs only 18¢ per truck. Ask about it!

17 Battery Place, New York 4, N. Y. · Thompson Building, Tulsa 2, Okla.

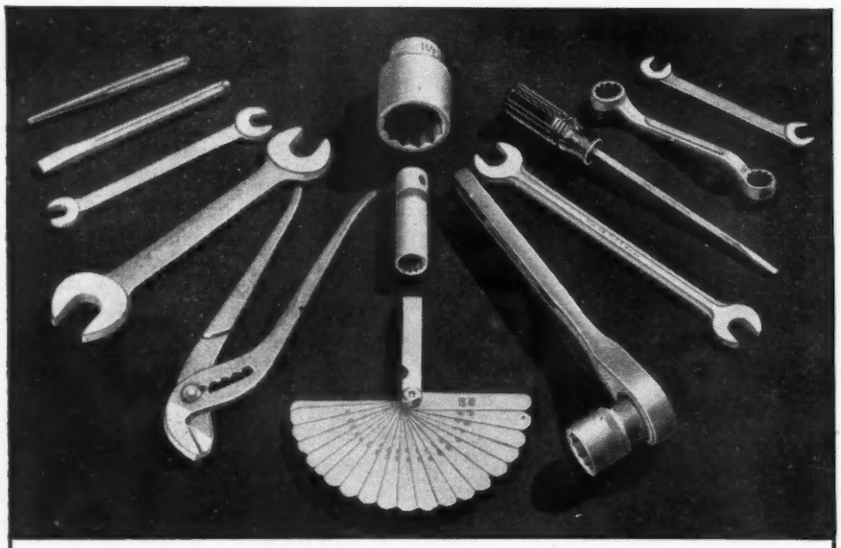
WHICH IS IT ?



WHICH IS THE OLDEST COMPANY IN THE AUTOMOTIVE INDUSTRY STILL IN OPERATION ?

☐ AUTOCAR ☐ GENERAL MOTORS
☐ FORD ☐ REO

Answer on Page 123



It's time to replace old, worn-out broken tools with new

HERBRAND TOOLS

Take a look in your tool kit and you'll probably find a lot of old worn-out cripples that should be replaced. There never was a better time to put your money in brand-new time and labor-saving Herbrand "Van Chrome" Tools.

You'll find Herbrand Tools carrying a brand famous for quality since 1881, excel in design, utility, balance, strength and performance . . . Fully described in Catalog No. 53 . . . For details, consult nearest Herbrand jobber, or write us.

THE HERBRAND CORPORATION • Fremont, Ohio
Drop-Forged Tools Since 1881

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 116)

any fleet to be proud of, particularly when this one has about 140 vehicles rolling an average of about 6,000 miles a month.

While nearly all fleets had at least a toe-in gage, others had varying degrees of equipment for front-end correction. Two of the fleets visited, one a very large common carrier, one a 40-truck dairy fleet had really complete equipment for this type work. Again both were completely sold on the value of the apparatus, both were using it at 1000-mile intervals, both cited amazing savings not only in the cost of farming out this type work, but also in savings in tire mileage.

At least five operators were equipped to strip their vehicles to the bare frame, then build up each component to standard specifications. Four of these, however, farmed out their frame straightening operations. The success of these programs is typified by a North Carolina carrier who on the day the writer called was in the throes of trading five old tractors for as many new ones which he had been promised within a matter of days. As he went over the list of probables for trade in, he came to one particular job which had been completely rebuilt in his own shop. "Hell we don't want to trade that one," he said. "It was in a terrific wreck, we rebuilt it from the frame up and I *know* it's in good shape." He was keeping his rebuilt wreck in preference to a model that had never experienced a moment's trouble. His maintenance was that good!

Only two fleets had their own crankshaft grinders. Admittedly they were big fleets. Again both were sold on the value of this equipment. But nearly all used systematic plans for either regrindings, remetallizing, or both. At least four operators had had good success with grinding first to .010 then .020 then .030, then down to .100 and rebuilding to standard. One shaft might be in as many as five different engines during these progressive stages in a single cycle. Success of the build up operations appeared to vary in direct relation to the size of the engine, the larger models being much more adaptable, generally than the smaller ones. Of course availability of the right kind of a machine shop to do this intricate job was an influencing factor.

(TURN TO PAGE 123, PLEASE)

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 120)

Body Building

THREE fleets in operations as varied as black from white were building all their own bodies, another was building some, still others were equipped for major body overhaul including huge jigs for trailer straightening operations. Of the three building their own, one was a relatively small coal dealer who was greatly reducing his body cost by building all-wood coal bodies of two-ton capacity in nothing more nor less than a good carpentry shop. Another, servicing a nation-wide fleet of linen supply trucks, had its own very extensive body factory for the fabrication of highly specialized wood and metal bodies from 1- to 3-ton capacity. The third was a large common carrier who had complete facilities for manufacturing both stainless steel and all-aluminum trailers up to 32 ft. One of the newest aluminum jobs, incidentally, a completely closed van-type 30-ft. job complete with rolling but not landing gear tipped the scale at exactly 6900 lbs.

A few fleets, as mentioned, had extensive facilities for body repairs and one in particular had had such good success with its repair jobs that it was making complete bodies. This fleet began by fabricating all metal replacement doors for large trailer van bodies. The factory price for a wood and metal job was about $70. The fleet cost for an all steel one, fabricated on a simple square channel steel frame, cost one-third the amount, lasted three times as long. From this success the fleet built several all-metal pick-up bodies, found them stronger and much more durable in city operations than standard commercial types.

Home-Made Equipment

SEVERAL fleets had interesting examples of locally fabricated shop equipment, made mostly from salvaged parts, ranging from a simple but carefully designed workstand to meet some special need, to giant wreckers equipped with rigging and power-take-off arrangements as varied as the number who had them. In between came a long list of specialized equipment such as portable cranes, some especially adapted to handle transmissions inside the cab, lighting fixtures, testing equipment and even a diesel-powered air compressor of huge capacity. Most fleets had purchased all their equipment, either new or used from standard sources.

Tire Picture Improved

THE TIRE situation was beginning to ease, though cost was still a vital factor stemming largely from the fact that purchases were being made at retail outlets and prices. Many fleets showed foresight in using up all avail-

(TURN TO NEXT PAGE, PLEASE)

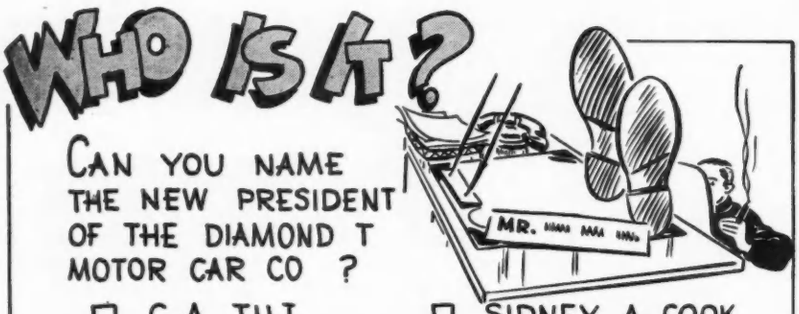
● WHICH IS IT?

ANSWER

(To Question on P. 120)

Autocar, which was organized in 1897, for the exclusive manufacture of automotive vehicles and has been so engaged without interruptions or reorganization ever since.

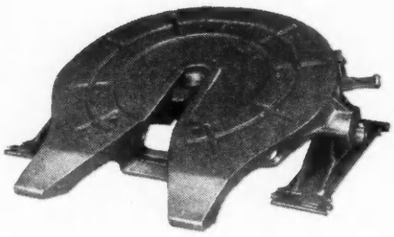
FOR THOSE Door to Door DELIVERIES
No. 4877
No. 4878
No. 5613
NO. 575716-A
ADJUSTABLE SWIVELING PEDESTAL
NO. 575717 "PEDALOC" SWIVELING TILTING PEDESTAL
The Eberhard line contains many items specifically designed for door to door bodies. A few are illustrated here.
Above is the popular No. 565694 SLAMTITE Medium-Duty Lock with finger-hook latch and tapered bolts that pull door tight when slammed.
At left is an application of the No. 565698 Slam Lock to folding doors.
Eberhard thin slam action locks also include the "Recesso" No. 4877 Slam Lock, No. 4878 Slamtite, and No. 5613 Slam Action Lock.
At the lower left are two of an assortment of Eberhard seat irons, including a type for every purpose.
For such small jobs such as these or for the largest truck bodies, you will find just the material you need in the Eberhard line.
Consult the Eberhard Catalog
Eberhard Manufacturing Co.
Division of the Eastern Malleable Iron Co.
CLEVELAND, OHIO
EBERHARD
AUTOMOTIVE HARDWARE
Consult the LATEST EBERHARD CATALOG
E

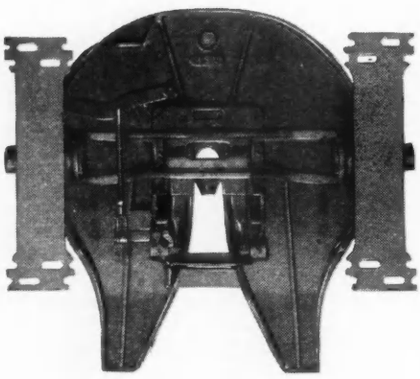


Answer on Page 126

GET THE *Safety* OF CAST STEEL IN 5TH WHEELS

The ASF Safety 5th Wheel plate is a rugged, *one-piece* steel casting with the central portion slightly depressed so that load rests practically *over* the supporting brackets.





Note the many reinforcing ribs that help give the cast steel plate its *great strength;* the compact, integral housing which contains and protects the coupler jaws and lock; and the clean-cut, functional design, throughout. Safety 5th Wheels are a result of more than 40 years of railroad coupler experience.

Get the Facts on this BETTER 5th Wheel!

You want *safety*—every trucker does. That's why ASF Safety 5th Wheels are winning *so many* new friends—that, and *longer* king-pin life; *sure,* easy operation; and automatic locking action—*independent* of springs. Safety 5th Wheels *can't* unlock accidentally, and just a quick glance tells you whether the wheel is locked. If it is, it's locked to *stay.*

Send for literature, right now. Learn how king-pin play has been *conquered;* what positive locking *really* means; why Safety 5th Wheels stand up where other wheels *fail.* Types and sizes for every service. Drivers *praise* them. Write today. Automotive Division, American Steel Foundries, 400 N. Michigan Ave., Chicago 11.

A·S·F *Safety* 5th WHEEL

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 123)

able ration credits before the lid was taken off. Others who had established good relations with local dealers received fairly good-sized shipments, the day after controls were lifted. Generally stocks seemed higher than at any previous period during the war years.

Diesel Engines

ONLY three of the 133 fleets visited were using Diesel equipment. All of these were completely satisfied with their engines. One North Carolina petroleum hauler, standardized on 20 Diesels in the 150 hp. class and carrying 40,000 lb. g.v.w., approached the unbelievable figure of 5.5 cents per mile in total operating cost. At the time of this calculation his units averaged about 150,000 miles total and not a single one had been taken down for so much as a ring job. He expected at least 200,000 miles before relining cylinders and believed that operating cost would increase only very slightly after this period had been reached.

Fleet Consolidations

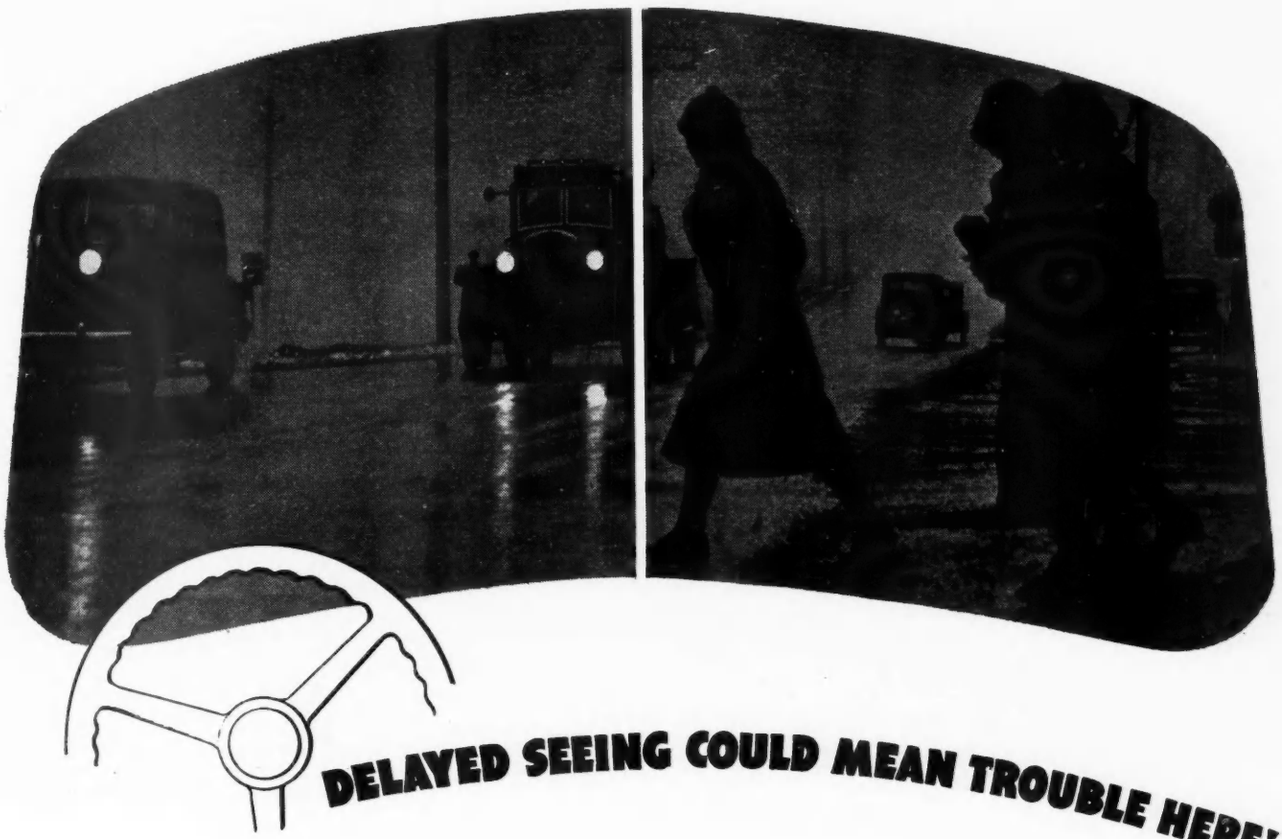
THERE were several examples of fleet consolidations. In New Orleans and Atlanta, several of the larger laundries had been purchased by a single controlling firm which promply consolidated fleet operations. In New Orleans all the trucks had been assembled at one large garage. In Atlanta the fleets operate under the supervision of an overall superintendent and a very efficient master garage, which handled all purchases and all major unit rebuilding.

Also in New Orleans was a brand new consolidation of some 12 local ice delivery companies, now in the throes of transforming its widely scattered and somewhat dilapidated fleet into a closely coordinated central operation. In Baltimore three of the largest department stores had pooled their fleet resources a few years ago and formed a company known as Delivery of Baltimore, Inc., which is operating on a very successful basis.

Leased Trucks

SOME for-hire operators are selling their trucks to drivers, then leasing them back to carry company loads on a cost per mile basis usually figured around 15 cents per mile plus a bonus on loads over 20,000 lb. Usually the company assumes full liability respon-

(TURN TO PAGE 126, PLEASE)



DELAYED SEEING COULD MEAN TROUBLE HERE!

It's a matter of split seconds.

Time lost *trying to see* is time lost in averting the hazard. For greater safety, keep your fleet free from conditions that slow down seeing—such as cracked or discolored windshields or windows.

Check your fleet, monthly, for glass that needs replacement. It will pay big dividends in extra safety—as well as eye comfort for drivers.

Replace cracked or discolored glass with L·O·F HI-TEST SAFETY PLATE GLASS

This high-quality product is made of two panes of plate glass, ground and polished for maximum freedom from distortion and laminated with a sheet of clear, tough plastic.

Specify L·O·F Hi-Test Safety *Plate* Glass—in windshields *and* windows—for replacement and for your new equipment. Libbey·Owens·Ford Glass Co., 7136 Nicholas Building, Toledo 3, Ohio.

WHEREVER VISION IS IMPORTANT USE L·O·F *Polished Plate* GLASS

L O F **LIBBEY·OWENS·FORD** *a Great Name in* **GLASS**

INSTALL DUGAS EXTINGUISHERS AT THESE HAZARD SPOTS

- Gasoline and Oil Storage and Handling
- Repair and Maintenance Shops
- Paint Spray Operations
- Welding Operations

STOP FIRE *FASTER*

WITH

AN ANSUL PRODUCT
duGas
REG. U.S. PAT. OFF.
THE MASTER OF FLAME

DRY CHEMICAL

● Upon striking fire, DUGAS Dry Chemical instantaneously releases 1,100 times its volume in flame-smothering gas that chokes off fire in seconds. The swift, fire-stopping power of DUGAS Dry Chemical is unaffected by wind or draft. It is undiluted by passage through the air. The gas is released only in the immediate flame area.

Dangerously close approach to flames is eliminated because the stream of dry chemical is expelled under high pressure, permitting safer and longer range fire extinguishing operation.

Amazingly fast and effective, DUGAS Extinguishers provide more fire protection . . . per pound . . . per unit . . . per dollar . . . against all types of oil, gasoline, grease, paint, and electrical equipment fires. **And DUGAS Extinguishers Can be Recharged on the Spot.**

DUGAS 15-T HAND EXTINGUISHER

GET THE FACTS ON DUGAS EXTINGUISHERS

Write today for further information including authoritative, impartial data showing characteristics of all types of approved fire extinguishers. The Ansul technical staff of fire protection engineers is ready to serve you.

Listed and approved by Underwriters' Laboratories and Factory Mutual Laboratories.

SEND FOR BULLETIN No. 923

ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN
FIRE EXTINGUISHER DIVISION

A REPORT ON VISITS TO 133 FLEETS

(CONTINUED FROM PAGE 124)

sibilities and thereby exercises considerable control over its drivers.

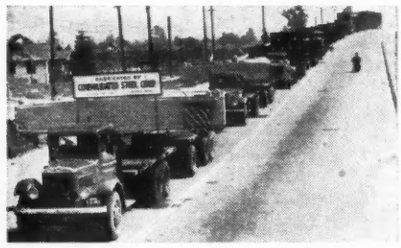
Others have gone still further by deducting a flat percentage, usually around 30 per cent, from the gross revenue, the driver-owner pocketing what is left. The selection of loads by drivers appears to be an ugly problem in this type of operation.

Most others are using the leasing plan purely as a means of supplementing their own vehicles, leasing such vehicles as might be necessary to carry obligated loads.

Auto-Lite Offers Booklet

A new 12-page booklet listing replacement battery specifications for trucks of all types and models, tractors, buses and other power units has been prepared by the Auto-Lite Battery Corp.

The booklet, which also lists specifications for passenger cars and gives detailed information about specific Auto-Lite batteries, is available to battery distributors and dealers.



Shown here are Mack trucks stretching as far as the eye can see convoying massive prefabricated ship sections from Consolidaed Steel's Los Angeles plant to the shipyards. The sections weighed from 12 to 18 tons and varied from 14 to 24 ft. in width. Progressive Transportation of Compton, Cal., moved the parts

● WHO IS IT?

ANSWER

(To Question on P. 124)

E. J. Bush, formerly vice president and general manager of the company, took the office of president of Diamond T the first of the year. He succeeds C. A. Tilt, who founded the company and held the post 40 years.

TRUCKS ON ICE . . . NEED POSITIVE BRAKE CONTROL

When trucks skate on icy roads, the fault is usually in their brakes. Wheels locked by uncontrollable brake applications cannot be blamed on the driver. The brakes grip harder than he intends, because his pedal does not have positive control.

HYCON Brakes deliver hydraulic pressures in correct proportion to pedal pressures; they are 100% hydraulic. They don't *lag*; the hydraulic power is continuous and requires no help from vacuum or air. The driver has positive braking control at all times, whether his truck is loaded or empty, whether pavements are slick or dry, whether his motor is running or stalled.

Save Gas . . . Save Tires . . . Save Money

Unlike existing types of power brakes, HYCON compound cylinders operate independently of the motor, so that carburetors can be adjusted to maximum idling efficiency . . . This results in substantial savings in gasoline consumption. *Controlled* braking reduces *over*-braking. This cuts tire wear. HYCON Brakes require fewer adjustments; no maintenance beyond that of standard type master cylinders; and ease of installation reduces cost of application.

Try a Demonstrator Unit

HYCON Truck Brakes are now available to replace 1¼" and 1½" Di. original equipment master cylinders. Order a demonstrator unit from your local power brake distributor, or write direct to The New York Air Brake Company, 420 Lexington Ave., New York 17, N. Y.

HYCON

Compound CYLINDER

Eliminates brake lag, improves safety factor, simple and quick to install, cuts tire wear and fuel consumption, reduces maintenance.

Look for this Registered Trade Mark

THE NEW YORK AIR BRAKE COMPANY

420 Lexington Avenue, New York 17, New York

PAINTING POINTERS FROM A NEAT FLEET

(CONTINUED FROM PAGE 41)

might not pay much attention to the looks of our delivery vehicles. But new and prospective patrons are apt to think that a laundry which operates dingy-looking trucks may not be too careful with the processing of customers' linens."

In order to make certain that vehicle paint jobs are up to proper standard for appearance, as well as for durability, Winchell handles this part of his over-all fleet maintenance in the company's own shop. And, out of long experience, he has set up definite specifications for both materials and workmanship—especially, surface preparation.

Until about a year ago, when he took over maintenance supervision of the laundry's plant machinery as well as of its fleet he did the painting and lettering himself. Thus, he was able to maintain the exterior upkeep of his vehicles during most of the war period.

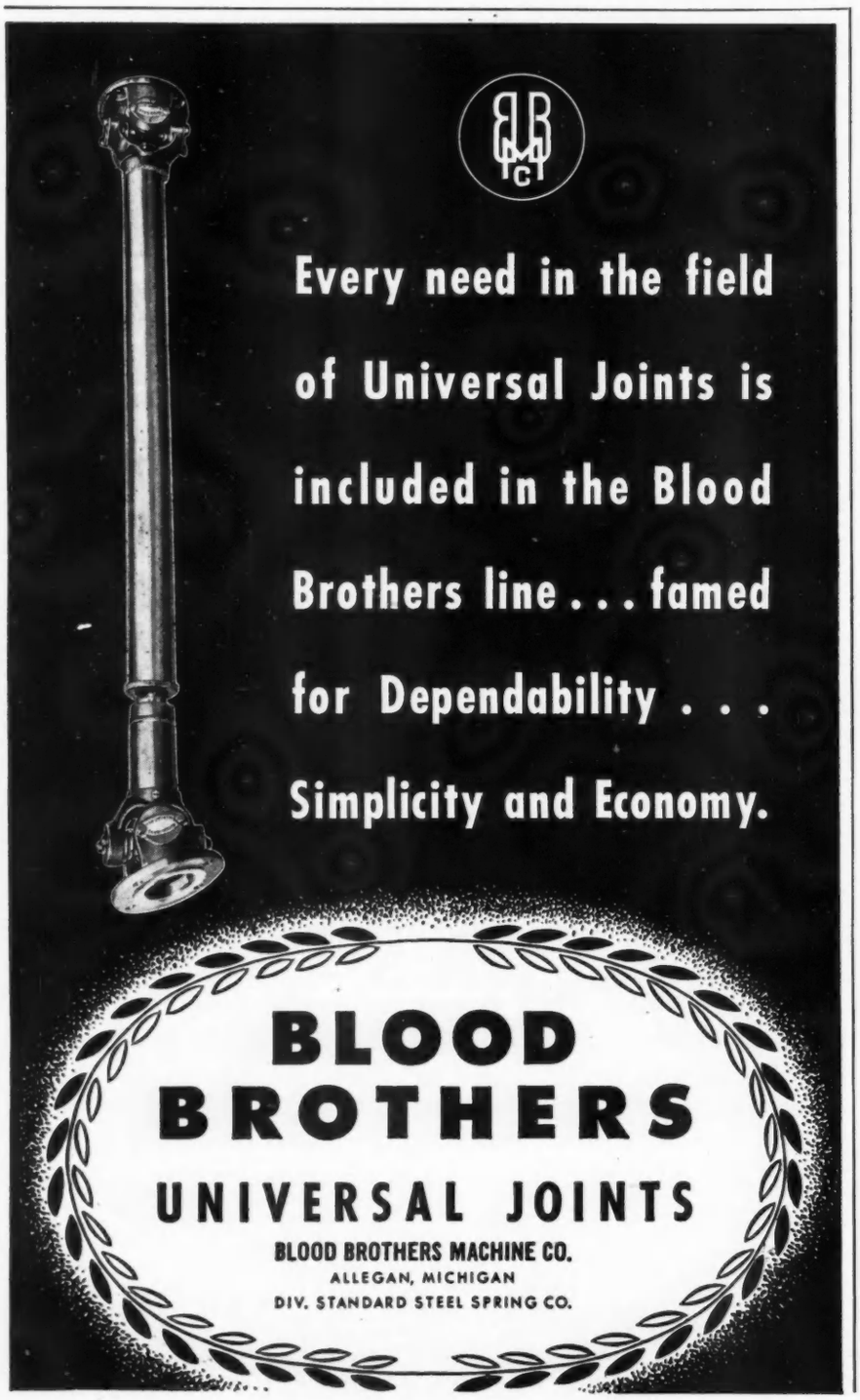
Upon taking over his added responsibilities, he "broke in" one of his fleet maintenance men to do the surface preparation and painting. The lettering now is being done by a professional sign painter with materials furnished by the laundry.

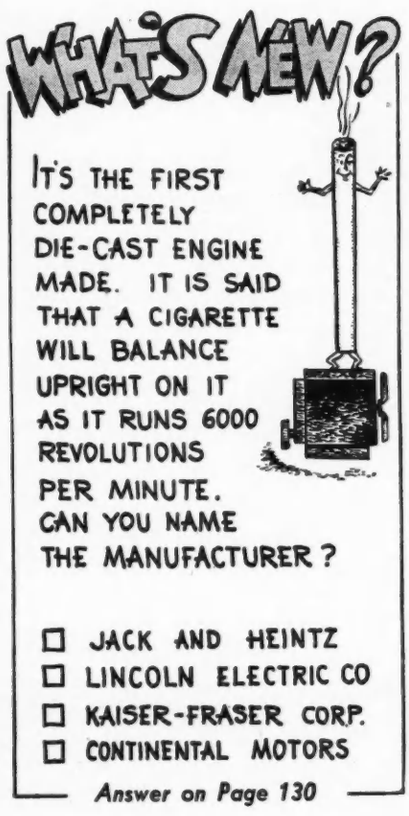
Stresses Surface Preparation

SNOW-WHITE paint, Winchell claims, is one of the most difficult surface coverers to apply successfully. It is, to a certain extent, transparent. Hence, any carelessness in surface preparation is bound to show up in the finished job. Therefore, the key secret in getting satisfactory results, when using white for a final coat, is a thorough preparing of the surface to which it is to be applied.

Here is Winchell's method for processing a paint job, which will stand up and look well: As a preliminary, the vehicle gets a thorough washing. All accumulated dirt and grease are steam-cleaned from the engine, chassis and under the fenders. For this purpose, a portable steam jenny is used. This device is kerosene burning, and is equipped

(TURN TO PAGE 130, PLEASE)




WHAT'S NEW?
IT'S THE FIRST COMPLETELY DIE-CAST ENGINE MADE. IT IS SAID THAT A CIGARETTE WILL BALANCE UPRIGHT ON IT AS IT RUNS 6000 REVOLUTIONS PER MINUTE. CAN YOU NAME THE MANUFACTURER?
☐ JACK AND HEINTZ
☐ LINCOLN ELECTRIC CO
☐ KAISER-FRASER CORP.
☐ CONTINENTAL MOTORS
Answer on Page 130

Soft pressure does it...

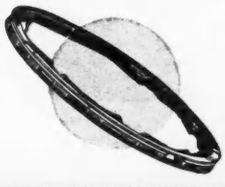
Just enough pressure to keep the segments on the cylinder wall — that's the *soft pressure* principle of oil control, employed in Hastings Steel-Vent piston rings. For satisfying performance and long life, you can bank on Hastings Steel-Vent "motor-engineered" sets in any engine condition, from extreme tapers to rebores.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN

Hastings Ltd., Toronto

SOFT PRESSURE DOES IT — IN REBORES, TOO

Stop-and-go driving is doubly hard on an engine, but long ago this big ice company solved its ring troubles with Steel-Vent: "Our job is to help conserve food and we must have efficient transportation. Hastings Steel-Vent ring sets have given us longer life and less cylinder wear in our fleet of 72 trucks. We have been using Steel-Vents for the past six years in re-ring and rebore jobs. Hastings Steel-Vent sets are really engineered and have reduced maintenance costs."



HASTINGS STEEL-VENT

PISTON RINGS

U. S. PAT. 2,148,997

TOUGH ON OIL-PUMPING GENTLE ON CYLINDER WALLS

PAINTING POINTERS FROM A NEAT FLEET

(CONTINUED FROM PAGE 128)

with an electric motor which force-feeds the fuel and powers a fan to direct the heat on the water tubes. Steam pressure is automatically held to a maximum of 80 lb. This apparatus, which plugs in on a 110-volt circuit, has proven handy for many cleanup jobs around the laundry's two production plants.

After cleaning, the vehicle's body and outside metal work are carefully inspected, and all dents and breaks are repaired. If they are only minor repairs, they are taken care of in the company's own shop. If not, the work is sent out.

When this routine is completed, the surface conditioning begins. All small indentations and welds are leaded over, and rough edges on the old surface are "feathered" (smoothed) with No. 100 "production" sand paper. Then, the entire surface is gone over with No. 220 grit sandpaper, being careful that any oil spots or finger marks are removed.

For sanding, the shop has electric-powered sanders of both rotary and vibrating types. Power sanders, Winchell is convinced, save time and effort, as compared with hand sanding. Moreover, they tend to produce a more uniformly smooth surface. For finer work, he prefers the vibratory type.

Next, comes the application of the undercoat. For this, any good-quality synthetic undercoat paint (combined primer and surfacer) can be used. The undercoat must be allowed to dry overnight. Then it is sanded down with No. 220 paper to an absolute smoothness.

Finally, a high-luster finish coat is applied. This, too, must dry overnight before lettering. The paint for wheels and fenders is a high-luster black.

Black lettering on a white backing is eye-arresting, and a mental tie-in between the snowy background and a freshly-opened bundle of spotless linens.

To get the pastel shades of blue and pink used on the diaper service trucks, enough blue or red is mixed with the white to get the desired tint. The upper half of the body is "baby pink" and the lower half "baby blue." The latter coloring is used for the wheels and for the lettering on the upper part of the body. A black outline emphasizes the lettering.

"Not only," explains Winchell, "do our delivery trucks serve as our business cards to all who see them, but we employ them as traveling billboards as well. Fastened to each

(TURN TO PAGE 132, PLEASE)

SOUTH BEND PRECISION LATHES

Here is essential service equipment that can quickly pay for itself in your shop. With it you can re-machine worn or broken parts that have been repaired or built up by welding or metal spraying, refinish valves and commutators, finish pistons, make bearings and bushings, machine shafts, sharpen reamers and cutters, and rework and fit parts.

In a dozen ways a South Bend Lathe can save its cost—by testing and truing shafts, thus preventing costly breakdowns—by making urgently needed repair parts and saving days of delay—by keeping cars, trucks, and buses on the road.

FREE CATALOG! Write today for this South Bend Lathe Catalog. State size lathe (9", 10", 13", 14½", or 16" swing) in which you are interested.

Lathe Builders Since 1906

SOUTH BEND LATHE WORKS
445 EAST MADISON STREET • SOUTH BEND 22, INDIANA

● WHAT'S NEW?

ANSWER

(To Question on P. 128)

Jack and Heintz, or Jaho, famous, among other things, for its elaborate employee relations plan. The Jaho automotive engine is air-cooled, completely die-cast and said to develop one horsepower for each pound of weight.

(Advertisement)

LUGGING A LOAD A LONG WAY FAST

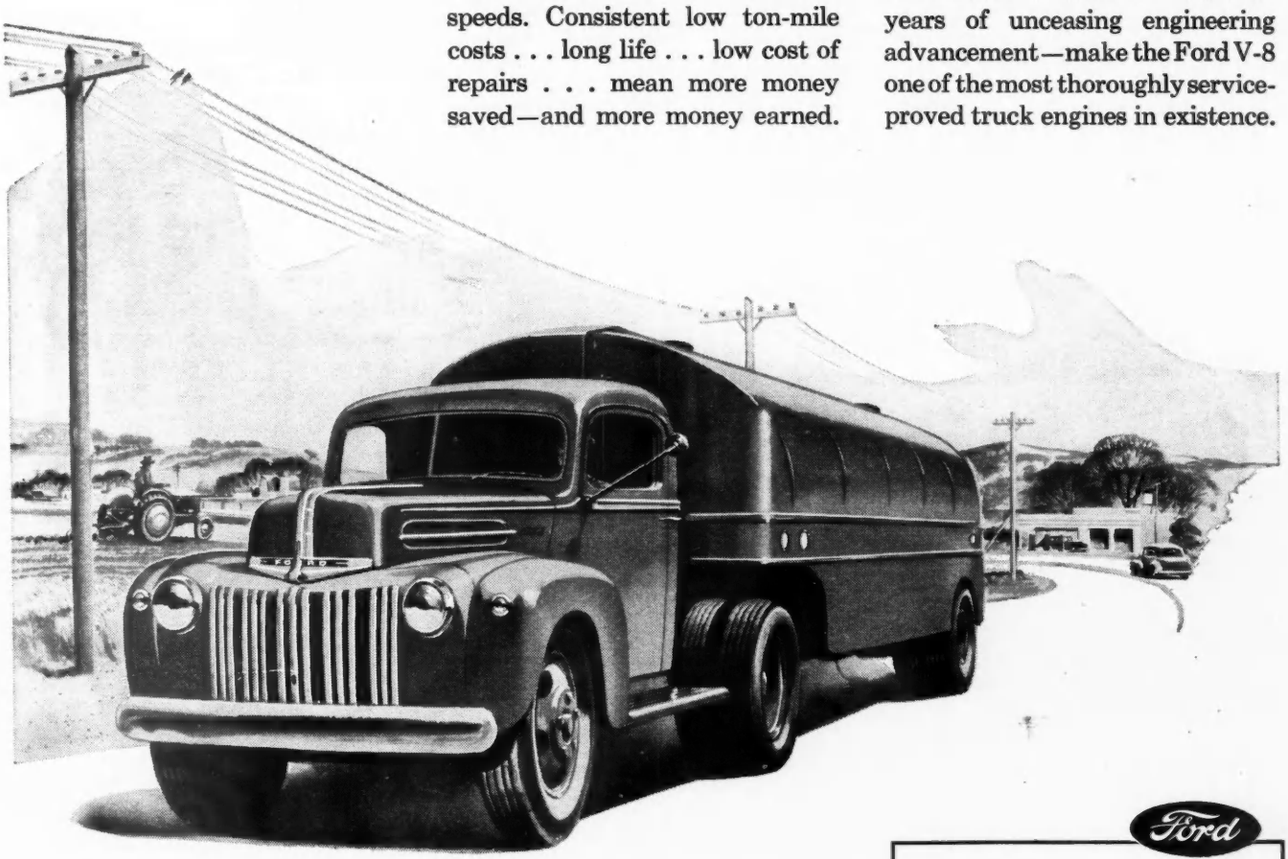
100 V-8 HORSEPOWER

really "Talks Torque"!

In highway traffic, trucks must move fast to earn a profit for their operators. With its high horsepower and sustained high torque (torque is simply horsepower *at work*), the Ford V-8 engine *really* performs in inter-city heavy duty hauling service.

That's *one* of the important reasons why Ford Trucks are first-choice in so many inter-city fleets. They *put out* at traffic road-speeds. Consistent low ton-mile costs . . . long life . . . low cost of repairs . . . mean more money saved—and more money earned.

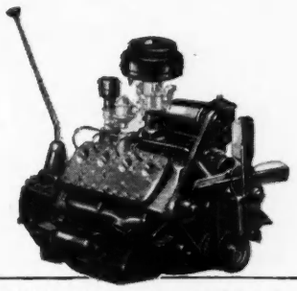
It's Ford all-round truck engineering, of course—in frames, springs, axles, clutches, transmissions and steering—that provides much of this endurance and economy. But the long-pull load-lugging ability, for which Ford Trucks are so widely preferred, has its beginning in the Ford V-8 engine—an engine such as no other truck can provide. Fourteen years of service history in millions of vehicles—fourteen years of unceasing engineering advancement—make the Ford V-8 one of the most thoroughly service-proved truck engines in existence.



THE FORD V-8 ENGINE

A big engine, developing 100 horsepower, and 180 pounds-feet maximum torque. A capable engine, with generously large coolant and lubricant capacity for long, hard, hot-weather pulling. A tough engine, with new Ford steel-cored Silvaloy rod-bearings, more than twice as enduring as former types of bearings; with *all* valves seating in hard alloy steel inserts, and with tappets precision-set to permanent proper adjustment. A thrifty engine, with new cam-ground light-weight 4-ring pistons, providing excellent oil economy and long-lasting good compression; with advanced-type balanced dual carburetion and automatic control of intake manifold temperature and spark-advance. An efficient engine, because of compact, space-saving V-8 design, with its short fuel-intake travel. An ideal type of engine for inter-city heavy duty hauling, because, (in contrast to most engines of fewer cylinders but of comparable size), the torque of the V-8 holds at relatively high levels throughout the speed range most used on the open road. This V-8 advantage means you can carry *more load*, or carry the same load at *higher speed*, or keep an extra power reserve available for headwinds, grades, quick acceleration and heavier going. This fact has much to do with the superior over-all performance consistently reported by owners.

Ford



90° L-head. Compression ratio 6.75 to 1. Bore 3.187 inches. Stroke 3.75 inches. Piston displacement 239 cubic inches.

FORD TRUCKS

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS

NEW!

MAGNUS KOL-DIP PARTS CLEANER

HERE'S a new idea for cleaning automotive parts. Using two famous Magnus cleaners . . . Magnusol for oily, greasy dirt, and Magnus 755 for engine varnish, gum, sludge and carbonized oil . . . this set-up offers speedy, low-cost cleaning of all engine parts and accessories.

Portable · Compact · Roomy

The left-hand compartment of this compact, portable system is big enough to take a complete engine block and a basket of parts at the same time. All work in this compartment is soaked for a few minutes in cold Magnusol solution. The work is then moved to the rinse compartment (the same size as the Magnusol compartment), where it is flushed off with a pressure stream of cold water. Oily, greasy parts require no further cleaning, and are ready for re-assembly or repair.

Small parts with carbonized oil deposits, engine varnish, gum and sludge are given a final cleaning in the small right-hand tank by dipping in cold Magnus 755 solution until deposits are softened. They are then moved to the middle, or rinse, compartment and flushed clean with the pressure water.

This simple, effective set-up will greatly speed up *your* cleaning operations, cut your costs and give you vastly improved results.

Write us for complete details on Magnus Kol-Dip Parts Cleaner, Magnus 755 and Magnusol.

MAGNUS

MAGNUS CHEMICAL CO., 38 SOUTH AVE., GARWOOD, N. J.
Fleet Cleaners & Machines

PAINTING POINTERS FROM A NEAT FLEET

(CONTINUED FROM PAGE 130)

side of these vehicles is a removable, metal panel, 18 x 38 in. To this, we attach advertising material—patriotic, civic promotion or merchandising publicity — which may be changed at will."

Cost Runs $35 per Year

WINCHELL keeps an accurate record of all labor, materials and outside charges on each vehicle. From these figures, he finds that, while the charges for individual paint jobs vary somewhat, the *average* cost covering *all* items, except lettering, runs around $50. The lettering item ranges from $15 to $20. Winchell knows of no local paint shop, which would give him a complete refinish job, with comparable workmanship and material, for what it, now, stands him.

"One of our home-made paint jobs stands up for a minimum of two years," he points out. Therefore, as we figure it, the annual cost of exterior-surface protection for each of

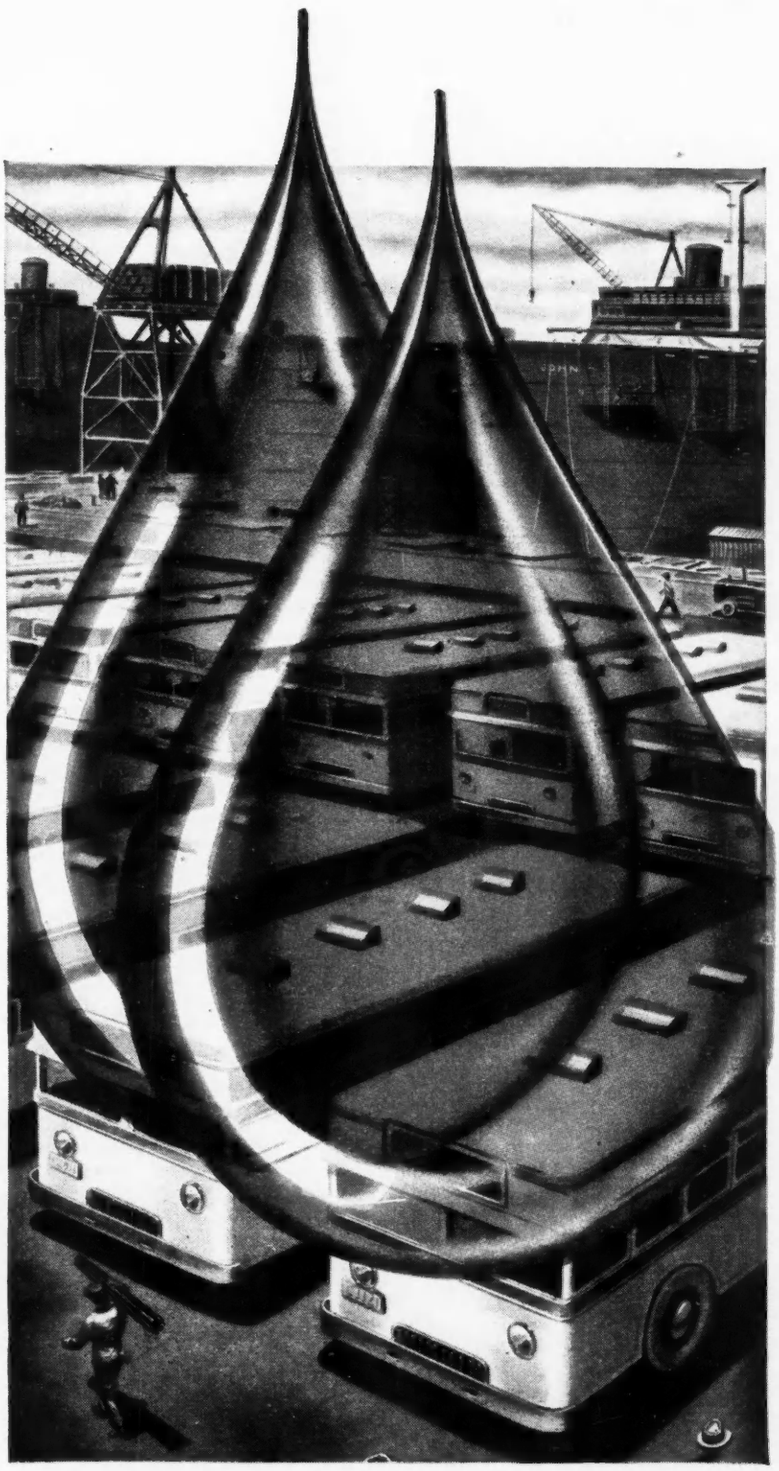
(TURN TO PAGE 134, PLEASE)

WHO SAID IT?
"THEY SENDS US ALONG WHERE THE ROADS ARE, BUT MOSTLY WE GOES WHERE THEY AIN'T"
☐ JOYCE KILMER
☐ RUDYARD KIPLING
☐ BILL MAULDIN
☐ GEN GEO S PATTON

Answer on Page 134

The truth about real

DOUBLE-DUTY OIL!



WHEN you think of motor oil, you naturally think of lubrication. But the truth is that the motor oil you buy today should do *more* than lubricate your engines—*it should keep them clean.*

That's the wonderful thing about Quaker State HD Oil—it's a *double-duty* oil. 1st, it *lubricates.* 2nd, it *cleans.*

The special detergent in Quaker State HD Oil really does an amazing job of keeping engine working surfaces free from clogging, trouble-making dirt, carbon, sludge and sticky "varnish." And, all the time it is doing this, the oil does a swell job of lubricating.

Yes, Quaker State HD Oil does do more—does last longer—does lubricate better. Try it now.

QUAKER STATE HD OIL

AND QUAKER STATE SUPERFINE LUBRICANTS

Quaker State HD Oil for your trucks, buses and tractors
Quaker State Motor Oil for your passenger cars

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

PAINTING POINTERS FROM A NEAT FLEET

(CONTINUED FROM PAGE 132)

our vehicles runs around $35—minus its considerable publicity value."

Paint Shop Well-Lighted

MIAMI LAUNDRY'S truck-maintenance department is housed in a 100 x 150-ft. garage building of concrete-and-steel construction. Part of the structure represents a 50 x 150-ft. addition, which was erected about 4 years ago. When this work was done, it included the installation of electrical wiring for lighting and powering a future paint shop, to be located in one corner at the front of the building. Two years later, necessary equipment was installed, and a concrete-block partition was put up to separate the paint section from the rest of the garage.

The paint shop, 18 x 22 ft., is exceptionally well-lighted. Natural lighting is supplied by a window on the south side of the building. Artificial illumination is furnished by four fluorescent fixtures, each of which mounts two 40-watt lamps. That provides a total lighting potential of 320 watts—more than enough to supply ample illumination for night painting.

One of the paint shop's most outstanding features is a propeller-type exhaust fan for expelling paint fumes. Set into the side wall, and protected by a screen of wire mesh, the fan is powered by a 1/3-hp., vapor-proof, electric motor. Before being released, through a duct, into the outer air, the paint fumes are "washed" free of their inflammable ingredients by a water-spray bath installed in the duct. This exhaust installation reduces to a minimum the amount of paint fumes inhaled by the operator. Also, it cuts down greatly the fire hazard stemming from the presence of inflammable vapor.

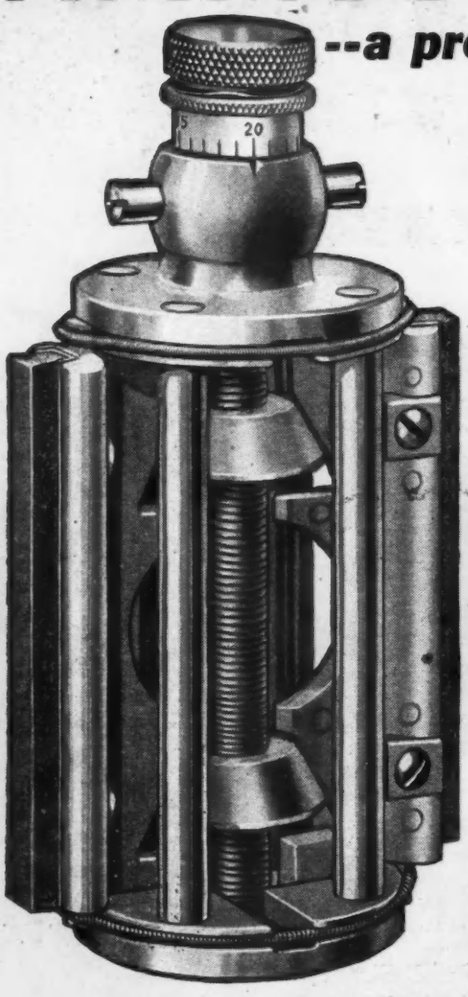
The paint-spraying equipment used consists of a one-quart spray-gun of standard manufacture. Air supplied by a 180-lb. compressor, is freed of any moisture content by a separator or "trap" installed in the air line near its attachment to the spray gun.

Excluding the paint-spraying equipment, which the shop already had, the cost of setting up the paint section totaled $342. Of this amount, $75 went for the exhaust fan and motor (bought "used"), $25 for the duct and water-spray installation and $56 for the lighting fixtures. The remainder of the cost covers the putting up of the partition, the necessary wiring and sundry small items.

Besides vehicle renovation, the

(TURN TO PAGE 136, PLEASE)

AMMCO SELF-LUBRICATING CYLINDER GRINDER --a precision hone



● SAVES TIME... CUTS COSTS... No vacuum cleaner needed... No flying dust...Completes the job, including clean-up, in half the conventional time.

● EASY to ADJUST... EASY to OPERATE... ACCURATE... One set of standard stones and one set of burnishing stones provides maximum cutting speed, and produces a mirror finish.

Model SL400—range 2 3/16" to 4"... Model SL500—range 2 11/16" to 4⅛". Extension carriers available to increase range to 5⅝".

See Ammco jobber for details.

AMMCO 2100 COMMONWEALTH AVE. NORTH CHICAGO, ILLINOIS

● WHO SAID IT?

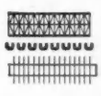
ANSWER

(To Question on P. 132)

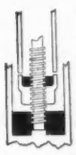
Rudyard Kipling, in a poem entitled "Screw Guns." Although Kipling was writing about British Army mules, the lines would be just as appropriate for our Army trucks that did so much to beat the Japs and Nazis.

These are the Refinements Trailer-Operators Demanded

Trailmobile Answers with Every Feature Requested--- and on a Line of Trailers Perfected by ELECTRONICS



In addition to the use of ELECTRONIC stress-measurement to create *"load distributing" under-frames,* the *strongest trailer-sides* ever constructed and to *improve* even Trailmobile's *superb standard under-carriage,* our engineers have worked for months to give Trailmobile trailers every practical refinement wanted by operators themselves.



Trailmobile's new prop is redesigned to invert the nut and screw. Now *both* operate *remaining* in a *bath of oil.* Lubrication is ideal! Therefore, our new landing-gear delivers 50% more efficiency—as proved by torque-wrench measurement!

And then due to proper landing-gear lubrication, Trailmobile's new cranking gear-box delivers 50% more lifting power, and 50% higher speed for the same amount of effort—and does this with *positive* action, so that *gears cannot slip-out of engagement!*

Our tire-carriers are of basket type. Wiring is in conduit, with "tap offs." Lights are recessed. Doors have positive side-fasteners; a new, interesting "refrigerator type" lock; and a new-type recessed handle. Side-panels have snap-on moldings, for easy installation of side doors without unfastening roof. Plywood inside is applied quickly and easily with screws.

Our tail-gate, too, is redesigned, with new, internal corrugations, making it *far* stronger than other tail-gates. Also it has a special loading skid. In addition, we make available the toughest possible wood-filled bumper of steel.

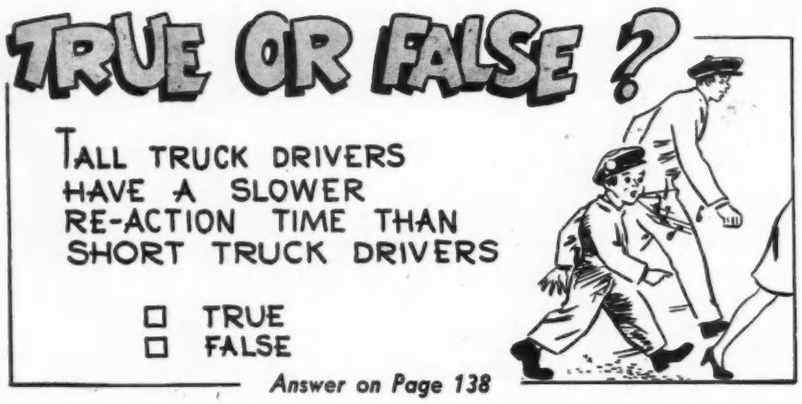
No item, however insignificant, has been overlooked in efforts to make Trailmobiles the biggest value in trailers ever offered.

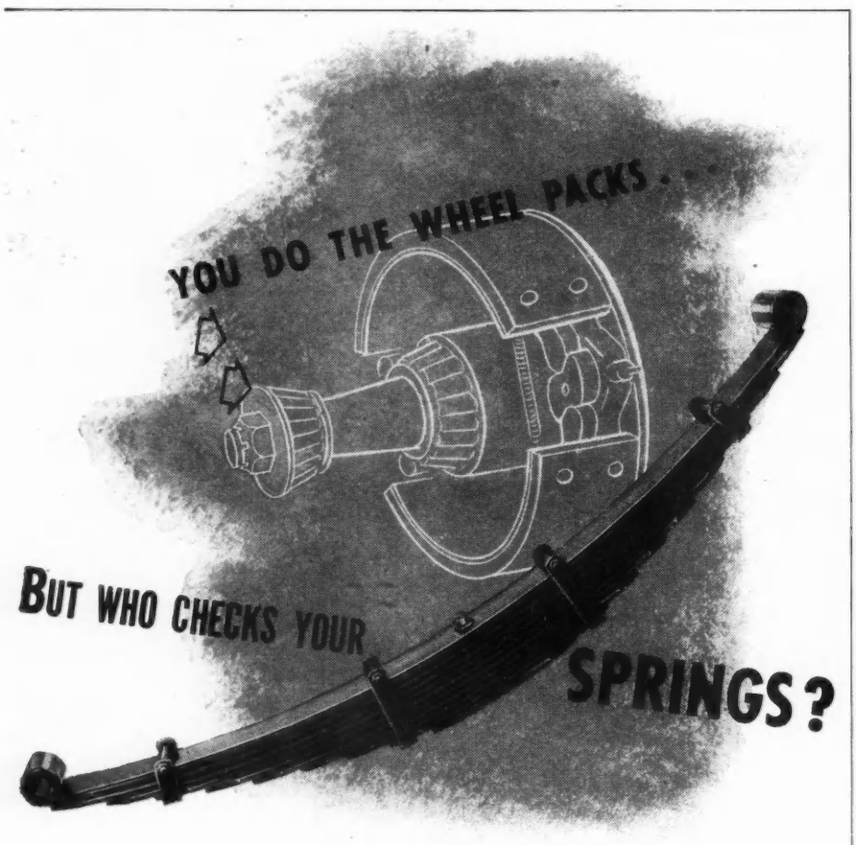
So see the *complete* Trailmobile line and the new Trailmobile Tandem at your *near-by Trailmobile Branch.* Your visit, soon, will be profitable to you.

THE TRAILMOBILE COMPANY
Cincinnati 9, Ohio

Protecting its 104 Year Reputation
— 71 "Homefolks" Service Centers

© 1946. THE TRAILMOBILE COMPANY





Call nearest Rowland Distributor. He's supplied by these branches:
ATLANTA 3, Ga., William and Harvey Rowland, Inc., 449 Marietta St., N. W.
BIRMINGHAM 3, Ala., Birmingham Spring Service, Inc., 2017 Avenue B, South
CHICAGO 16, Ill., William and Harvey Rowland, Inc., 2732 Indiana Avenue
JACKSONVILLE 4, Fla., Jacksonville Spring & Alignment Co., 137 Jefferson St.
PHILADELPHIA 30, Pa., William and Harvey Rowland, Inc., 1414 Fairmount Ave.
PITTSBURGH 13, Pa., Point Spring Co., 419 Melwood Street

▶ One sure way to see that your vehicles' springs are properly serviced is to make certain they get the practical, experienced care that only spring specialists can give them. Such specialized care is available from nearly a thousand Rowland Spring distributors. They offer a wealth of experience gained in servicing thousands of trucks and busses. Call your nearest Rowland distributor for periodic spring inspection and service, as well as replacement SPRINGS, mufflers, universal joints and wheel suspension parts. Wm. & Harvey Rowland, Inc., Frankford, Philadelphia 24, Pa.

ROWLAND SPRINGS — CERTIFIED ALLOY STEEL ROWLAND SPRINGS Est. 1795 — **SPRINGS • MUFFLERS • UNIVERSAL JOINTS • WHEEL SUSPENSION PARTS**

PAINTING POINTERS FROM A NEAT FLEET

(CONTINUED FROM PAGE 134)

paint shop has another use. It is employed, also, for spray-painting the metal disposal receptacles, which are furnished to customers, as a part of the laundry's diaper service. These containers are refinished, as rapidly as they show the least sign of surface deterioration.

They are thoroughly sanded, washed with mineral spirits, dried and sprayed with Refrigerator White; when it is obtainable, otherwise, any good white metal enamel is substituted. As a regular Saturday afternoon routine, the shop refinishes an average of 30 of these containers each week.

The cost of maintaining the paint shop, itself, and its equipment, Winchell states, is negligible. So far, neither the fan motor nor the paint-spray apparatus has needed repair —merely routine maintenance.

"Routine maintenance" means a periodic oiling of the fan motor and an after-use cleaning of the spray gun. As soon as work with the latter is completed, the gun should be cleaned with mineral spirits or lacquer thinner. These operations require only a few minutes' time.

And fluorescent lamp replacements have been infrequent. Economy on this last-named item is due to the fact that the lamp wiring installed is of sufficient size to carry current at the required voltage to the end of the run. This is an important but not-always-recognized factor in the operating cost of fluorescent lighting. When a lamp of this type operates at less than specified voltage, life is shortened.

END

(Please resume your reading on P. 42)

Clemson Offers Booklet

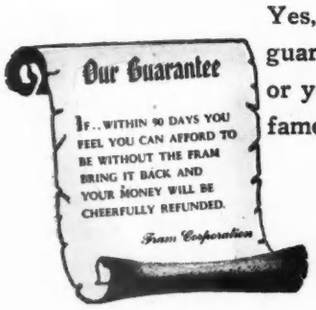
Selection of the proper blades for cutting various metals, causes and cures of common blade difficulties, and hints on "how and how not to do it," are featured in a new 30-page illustrated booklet offered by Clemson Bros., Inc., of Middletown, New York, manufacturers of Star hack saw blades.

The pocket size booklet is available upon request to the company.

No Wonder the Army and Navy Used Millions of FRAM Oil Filters

During the war the Army and Navy used millions of oil filters and cartridges made by Fram . . . because the armed services recognized that thorough oil filtration was vital in reducing maintenance and keeping their huge fleets rolling. So, to keep *your* fleet rolling and to save motors, maintenance and money, take a tip from the armed services and equip with Fram oil filters.

MONEY BACK GUARANTEE


Our Guarantee
IF... WITHIN 90 DAYS YOU FEEL YOU CAN AFFORD TO BE WITHOUT THE FRAM BRING IT BACK AND YOUR MONEY WILL BE CHEERFULLY REFUNDED.
Fram Corporation

Yes, every Fram oil filter is guaranteed to give satisfaction or your money back. Read the famous Fram guarantee below and then ask yourself if you haven't everything to gain, nothing to lose, by equipping with Fram. Remember, for years shop records the country over, have shown, in black and white, how Fram filters reduce engine wear and save overhauls, costly repairs. Fram superiority is based on hard facts!

ASK YOUR JOBBER

Don't delay! Ask your jobber about Fram today! And if your fleet is already filter-equipped, put in genuine Fram replacement cartridges all around to get the most from your present filters. There's a Fram cartridge made to fit 'most any type of filter, so see your jobber today! FRAM CORPORATION, PROVIDENCE 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto.

FRAM *Oil and Motor Cleaner*

THE MODERN OIL FILTER

REMODELLED "BARN" . . .

(CONTINUED FROM PAGE 44)

pressure pump installed in the hose circuit and a lift to aid the greaser with all but the heaviest vehicle.

In the general shop area there is, of course, an air compressor, which supplies air from shoulder-height outlets to all sections of the shop, slow and quick battery chargers, electric and acetylene welders, a brake riveter, a brake drum lathe which both grinds and machines and the already-mentioned, permanently mounted steel workbenches for the general mechanics. One of these concentrates on accessory overhauls, and has been doing an excellent job on starters, generators, distributors, fuel pumps and carburetors, which we keep in stock. There is also an electric power line at shoulder height around three walls of the shop providing convenient outlets at frequent intervals.

Anti-Freeze Mixture Stocked

THERE are also such necessary items as 55-gal. drums for oils and lubricants and also for anti-freeze and to aid in handling these heavy objects we have a special drum dolley which enables one man to do the job with ease. A worthwhile trick with regard to anti-freeze is to keep the mixture made up in a drum with pump, about one to three parts water, from which all vehicles are serviced during the winter season, thus eliminating the necessity for periodic testing.

The stockroom is small but efficient and meets all our present and contemplated needs. It will be noted that considerable additional space is gained in the balcony over the washrooms and office. Slower moving items are kept there while the faster moving parts are kept handy in steel bins on the main floor.

It is at once apparent that the shop provides no storage space for vehicles, this being handled in an adjacent garage where at present we are doing all our painting and the washing of heavier vehicles. When the second bay becomes available, there will be ample facilities for all service for all equipment.

(*Editor's Note: CCJ will have more details in a forthcoming issue.*)

END

(Please resume your reading on P. 45)

Maxwell A. Goodwin has returned from the Army to his prewar position as manager of the Chicago office of Clark Tructractor, division of Clark Equipment Co.

● TRUE OR FALSE?

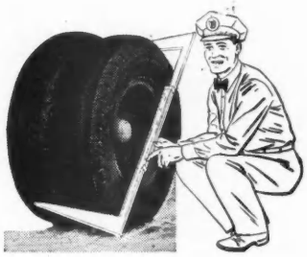
ANSWER

(To Question on P. 136)

True. Scientific tests have proved that on the average tall persons have slower reaction rates than shorter persons. This is accounted for by the longer distances the nerve impulses must travel to reach the brain.

Central Mike Says:
"Every Mechanic Needs These Two Sets!"
CENTRAL Certified Accuracy MICROMETERS
SET NO. 745 RL
Outside Micrometers
Range 0 to 4 inches.
$46.50
Complete with Ratchet Stops, Lock Nuts, Standard Test Gauges and Deluxe Hinged Plush-Lined Case
SET NO. 808
Inside Micrometers
Range 1½ to 8 inches.
$12.00
Complete with Extension Handle and DeLuxe Plush-Lined Case
MEMA
WRITE TODAY FOR CATALOG NO. 17
The entire line of individual micrometers and complete sets illustrated and fully described.
THE CENTRAL Certified Accuracy MICROMETER GUARANTEE
The Central Tool Co.
AUBURN, RHODE ISLAND
CENTRAL
FOR MORE THAN A QUARTER CENTURY SPECIALISTS IN FINE MICROMETERS
CERTIFIED ACCURACY
THE CENTRAL TOOL CO., AUBURN, RHODE ISLAND

A *Quality* SERVICE FOR EVERY TIRE



Wherever you see the blue and yellow sign shown below, you can obtain Penn-Craft Mileage Extension Service—increasing tire mileage, preventing tire deterioration, eliminating unwarranted tire failures. Regardless of the make of your tires, your Pennsylvania Tire Dealer will be glad to check your duals with the Pennsylvania Match-Your-Duals Gauge, and to explain the other money-saving features of Penn-Craft Mileage Extension Service.

TIRES
JEANNETTE, PA.

MANUFACTURED BY THE ORIGINATORS OF THE
Silent Vacuum Cup Tire

5-SPEED SPICER

(CONTINUED FROM PAGE 70)

The line consists of two five-speed models—the Model 6252 with direct on fifth; Model 6253 with direct in fourth and overdrive on fifth. For all forward speeds except low, the gears are of helical type, the low and reverse being spur gears. To assure easy shifting and to reduce gear replacements to a minimum, the large blocker type synchronizer — which has been in production for over 10 years—is used on 5th, 4th, 3rd, 2nd, and overdrive. The gears that idle on the main shaft are of constant mesh type and are carried on fluted oil bearings to give long life.

Numerous interesting design features common to both transmissions are given in detail here. In the first place, all gears are made from upset forgings of a three-way high quality gear steel and are carburized, reheated, and tempered, to give a Rockwell hardness of C 59-62. All shafts are mounted on anti-friction bearings selected specifically for the application of the unit.

Shift rails are interlocked in such fashion that only one speed at a time can be engaged. Sliding clutches that pick up the various helical gear speeds are provided with an arrangement making it impossible for speeds to work out of engagement while in operation. The gear case, clutch housing, bearing caps, etc., are made of high quality close grain cast iron.

The gear boxes are provided with a large SAE power-take-off opening on each side. Weight of the assembly, less the clutch, is 410 lb.; oil capacity is 15 pt. There is a choice of Spicer clutches, the 14-in. single plate or 13-in. two-plate being available. Provision is made for clutch adjustment through the bottom of the clutch housing.

The gear ratio for the two models are as follows:

	Model 6252	*Model 6253*
Reverse	7.79 to 1.00	6.09 to 1.00
First	7.81 to 1.00	6.07 to 1.00
Second	4.67 to 1.00	3.41 to 1.00
Third	3.06 to 1.00	1.79 to 1.00
Fourth	1.72 to 1.00	1.00 to 1.00
Fifth	1.00 to 1.00	.78 to 1.00

END

(Please resume your reading on P. 72)

MARQUETTE

REGISTERED U.S. PAT. OFFICE

has done it again!

• These Four New Marquette Welders are the latest Marquette achievement. Note a few of the advanced features. Model 262 C has built-in capacitor for high power factor. Telnic Bronze (new copper-nickel alloy) plugs and sockets doubles current carrying capacity. Newly designed transformer gives improved welding characteristics and ***Instant*** arc striking without high frequency or booster gadgets. Front panel designed for greater convenience. New aluminum alloy construction reduces eddy current losses and increases transformer efficiency. Ranges: Model 261 and 261 C, 20-200 amps.; Model 262 and 262 C, 20-275 amps. All Marquette Welders are Fully Equipped.

LOOK TO MARQUETTE FOR LEADERSHIP

MARQUETTE WELDING EQUIPMENT SOLD EXCLUSIVELY THRU THE NATION'S LEADING DISTRIBUTORS

MARQUETTE

REGISTERED U.S. PAT. OFFICE

Welding EQUIPMENT

A.C. ARC WELDERS · ELECTRODES
GAS WELDING And CUTTING EQUIPMENT
ACETYLENE GENERATORS · ACCESSORIES

MARQUETTE MFG. CO. INC.
MINNEAPOLIS 14, MINN.

WHO IS IT?

THE PRESIDENT OF THE SOCIETY OF AUTOMOTIVE ENGINEERS FOR 1946 IS ....

☐ JAMES M CRAWFORD
☐ L. RAY BUCKENDALE
☐ JOSEPH W FRAZER
☐ C. E. HEUSNER

Answer on page 144

TESTING

All Toledo automotive and aircraft parts undergo rigorous laboratory tests before their manufacture is ever started. The actual conditions under which combustion engines operate are duplicated in a dynamometer laboratory. Here parts are tested and experiments are made to develop better automotive parts for the future. Out of this laboratory have come improved valve designs and much data governing the use of tougher and better alloys . . . Look to Toledo for parts that are always right.

TESTING • • MANUFACTURING
RESEARCH • • ENGINEERING
• • • AND IN ACTUAL USE—

There are no Finer Automotive Parts in All the World Than

Genuine **TOLEDO**

The TOLEDO

STEEL PRODUCTS COMPANY • TOLEDO, OHIO, U. S. A
SINCE 1906

Makers of Fine Automotive and Aircraft Parts

LETTERS FROM READERS

(CONTINUED FROM PAGE 38)

Prefers Instruction Cards But Wants Engines Indexed

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

I think the instruction cards would be much preferred to the present day manuals.

I am sure the mechanic would be glad to have the instruction cards to refer to and would use them more than the manual. The manual is better than no instructions at all but a very poor way of getting information. First, they don't give enough information; second, after they have been used a few times there is so much dirt and grease on the pages half of the print cannot be read.

I feel sure the fleet operator would be glad to pay more for the instruction cards. Any improvement in operation is always profitable. The fleet operator, as a rule, is easily sold on anything that would be profitable to his business.

I think the size of the card is OK, small enough to be handy, yet large enough that the mechanic could not carry it off in his pocket.

One thing I think should be added: instruction cards for trucks should show, along with name of truck, make of engine on the index tab because some trucks may have different engines such as Waukesha or Continental. The same goes for the rear axle 2-speed Eaton, 2-speed Timken or double reduction and of course they are all different.

WALTER O. MARTIN,
Elk Refining Company
Charleston, W. Va.

Favors Instruction Cards

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

I am in favor of the Standard Service Instruction Card rather than present-day service manuals.

I feel sure that fleet operators would be willing to pay a nominal sum, as any such outlay would be repaid many times over, if only by eliminating all the guesswork.

The size (14x18) would seem to be about right for giving clear cut details.

J. G. CAMPBELL,
Supt. Mobile Equipment,
American Airlines, Inc.
Flushing, N. Y.

Card System Best

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

I think the card system best. The size is OK.

I believe a card system, if really followed up, would be a big help in any shop. It is pretty hard to find a man that does not need some instruction every day. There are plenty of mechanics that need help on each job.

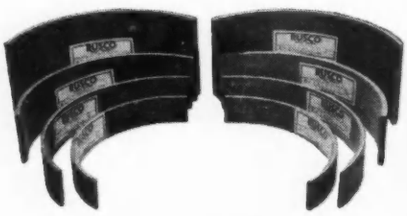
S. E. VANDERVEEN, Garage Supt.,
Bordens Dairy & Ice Cream Co.,
Grand Rapids, Mich.

(TURN TO PAGE 146, PLEASE)

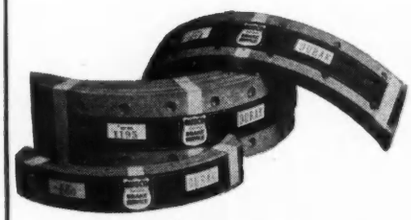
For Heavy Duty on Buses, Trucks, this Burly RUSCO Equipment Excels

OVER shell-ripped roads and desert sands, in arctic snow and tropic mire, the stamina and operational efficiency of RUSCO heavy duty automotive equipment was tested and re-tested under most taxing conditions throughout the war. That's why today, you'll find it pays to give preference to these three value-leading RUSCO products:

1. *RUSCO Heavy Duty Brake Blocks* famous for their tremendous strength, long and economical wear, on giant buses, trucks.



2. *RUSCO Group Brake Segments,* arranged in lining sizes and drum diameters to service over 1,000 different truck models.



3. *RUSCO Durak Sets and Rings,* a full moulded lining with a high-co-efficient of friction for all types of internal brakes.

"The Standard Of The Industry"

THE RUSSELL MANUFACTURING COMPANY
Middletown, Connecticut

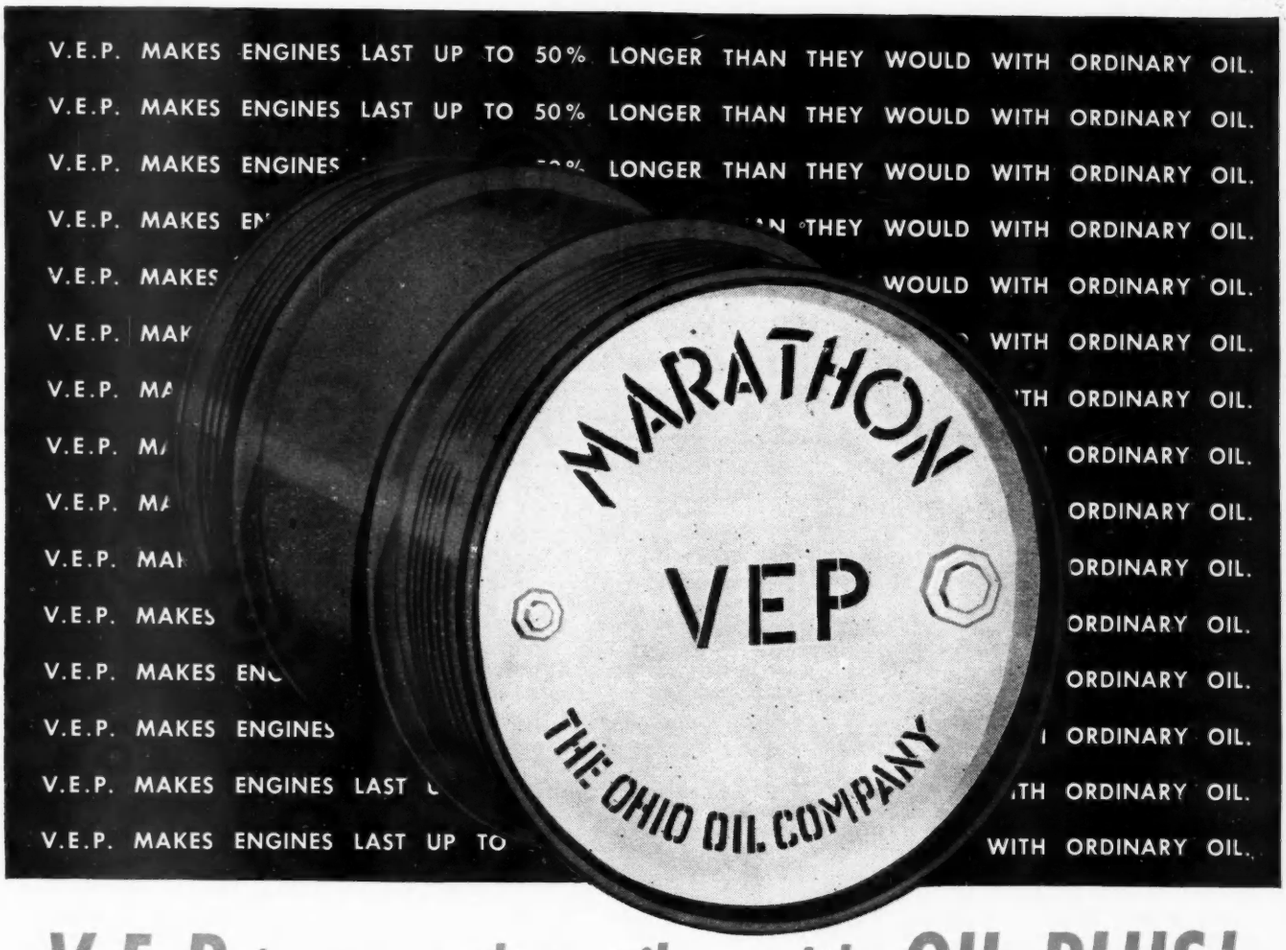
RUSCO
★★ ENGINEERED ★★
BRAKE LININGS
CLUTCH FACINGS

● WHO IS IT?

ANSWER

(To Question on P. 142)

New president of the S.A.E. is Ray Buckendale of Detroit. He is the first native Detroiter to hold the position. He has been a member of the S.A.E. since 1919 and is engineering vice president of Timken-Detroit Axle Co.



V.E.P. is more than oil . . . it's OIL-PLUS!

And it means a big plus for your engines: up to 50% longer life . . . 50% more work miles between overhauls

It's the proved way to keep engines out in front of a payload instead of in the shop. With V.E.P. Oil-Plus in the crankcase, you can be sure of up to 50% more miles before a major engine overhaul is necessary. And you can be equally sure that engines will last 50% longer than if you had used ordinary oil.

V.E.P. is the pioneer heavy duty detergent oil, proved before the war, approved during the war and gaining in enthusiastic acceptance every day.

V.E.P. has more than twice the film strength of ordinary oil. Resists heat, shock loads and pressure. It cleans engines, keeps them clean, dissolves the binder that holds sludge together. Carbon and varnish are reduced to a minimum. Free flowing. Non-foaming. And with V.E.P. you don't have to worry about "Start-Up" damage, caused by oil draining down and drying off when the engine's stopped and taking too long to get back on the job. V.E.P. is always on the job.

For more payload miles, less shop time, change to V.E.P. Call your local Marathon dealer or write, wire or phone The Ohio Oil Company.

The Ohio Oil Company produces all types of automotive greases and lubricants for every fleet requirement of trucks, tractors and trailers.

MARATHON

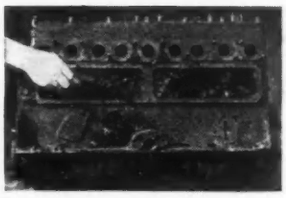
THE OHIO OIL COMPANY

Producers of Petroleum since 1887

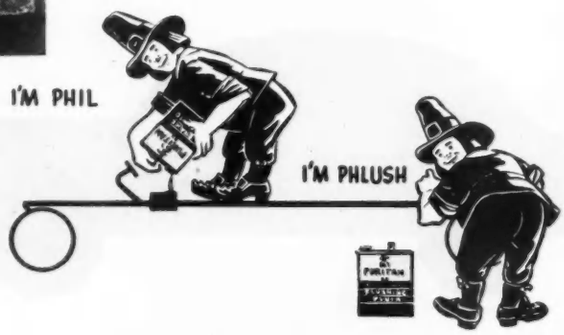
GENERAL OFFICES: FINDLAY, OHIO

District Offices: Robinson, Ill., Indianapolis, Ind., Louisville, Ky.

WHERE'S HOMER ?
Dear Ma: There are more Trucks here Than in any other State in The Union Homer
TELL US, WHERE IS HOMER ?
NEW YORK
TEXAS
PENNSYLVANIA
CALIFORNIA
TRUCK REGISTRATION
Answer on Page 150



YOU WOULD'NT PUT NEW VALVE SPRINGS IN A DIRTY ENGINE



Don't do Half a Brake System Job...

PURITANIZE

Putting new valve springs in an engine without thoroughly cleaning out the sludge and dirt would be pretty sloppy workmanship. Adding brake fluid to hydraulic lines that are gummed up and sluggish is just as impractical. Here's a condition that shouts "Puritanize".

A "Puritanize Job" on your commercial cars and trucks means brake safety—and it's easy to Puritanize in these two steps:

1 Clean out the old, inefficient and dangerously dirty brake fluid with quick-acting, thorough Puritan flushing Fluid.

2 Refill with non-gumming, non-freezing, non-boiling "all-miscible" Purtitan Super Hydraulic Brake Fluid.

To cut down on brake system maintenance Puritanize periodically. Get your supply of these Puritan Products from your distributor now. Protect the life line of your cars and trucks.

NAPA Assurance of Quality

PURITAN COMPANY, INC.
ROCHESTER, NEW YORK

LETTERS FROM READERS

(CONTINUED FROM PAGE 144)

Favors Cards But Implies Need for Manual

EDITOR, COMMERCIAL CAR JOURNAL,
DEAR SIR:

There is considerable discussion of the size, description, etc., of the manuals, or cards, for the fleet owners and shop mechanics. I think the cards should be 14x18, which should be a sufficient size to allow above the average size type letters that can be easily read by the average mechanic.

Another thing, these cards are going to mechanics and used by mechanics and a lot of things, such as how to drain crankcases, oil filters, etc., naturally would be eliminated. This, however, I think should still be in the manual of instructions for the care of a truck, car, etc.

As to the cost of these cards, I think the manufacturer should pay one-half of the cost and the ones who have the equipment the other one-half. In my particular case, I would require seven sets of cards on 12 different kinds of equipment to cover the District Shop force that we operate with.

The manufacturer would gain by im proving maintenance data service for his equipment. This also would help boost his sales by cutting down high upkeep cost.

I would suggest that you get some response from the manufacturers as to what they think about these cards and the cost that it would be to them, and if they are willing to assume part of it.

W. H. BROWN, Dist. Equip. Supt.,
Department of Highways,
Suffolk, Va.

END

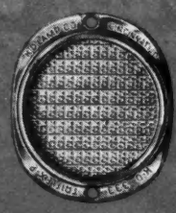
(Please resume your reading on P. 39)

Reconstruction is the new battle cry in Europe, and every bit of available rolling stock is being pressed into service. Here is an old Mack Bulldog, veteran of the first World War, hauling gravel in France to rebuild the damage of World War II. The old but still brawny Mack has been reconstructed to some extent too, it isn't powered with gasoline now—instead it has been converted into a wood burner. The fuel is carried in bags on top of the cab, and the driver is leaning on the fire box that has been built on the side

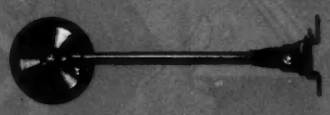
ASK THE SERVICE MECHANIC WHO DOES THE WORK HE WILL TELL YOU THE FACTS

THE K-D LINE

IS ALWAYS TOPS WITH CUSTOMERS

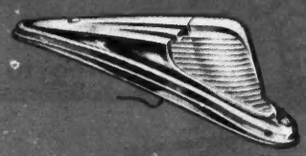


OVAL FLANGE MOUNTING REFLECTORS

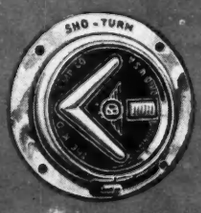


TRUCK EXTENSION MIRRORS

ARMORED CLEARANCE-MARKER LAMPS



STREAMLINED COMBINATION LAMPS



SHO-TURN DIRECTIONAL SIGNALS

SAFTEE DRIVING GLASSES

SEALED-BEAM HEADLAMPS

THE K-D LAMP COMPANY

AUTOMOTIVE *Saftee* EQUIPMENT

CINCINNATI, OHIO

New York Office — Noma Building, 55 West 13th Street, New York 11, N. Y.

Which Gives-- More Efficient Lifting?

ONE FINGER

Concentration of power thrust in a small area increases strains of unbalanced loads. It requires more effort--and produces excess wear on a hoist and body.

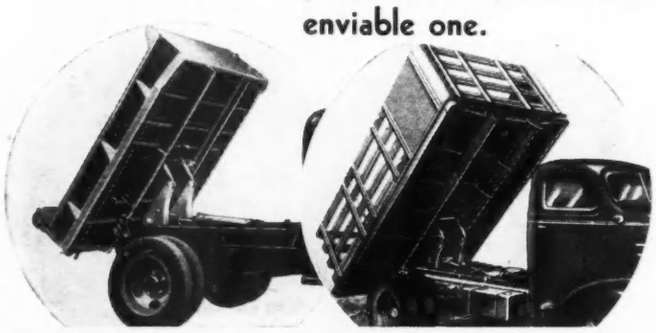
OR

Power thrust uniformly distributed throughout entire length and bredth of frame decreases strains of unbalanced loads--and minimizes wear on hoist and body.

A WIDESPREAD HAND

NOTE

With PERFECTION'S scientific understructure construction, the power thrust from the hoist is delivered--not to a single bolster or small cross-member directly against the floor of the body--but first to the longitudinal sills which distribute the thrust to ALL bolsters. It is largely because of this superior design that PERFECTION'S record of performance and service is an enviable one.



PERFECTION'S "Balanced-Power-Thrust" construction is standard on all stake and dump body styles with double compound lift arm hoists.

Built for all makes and models of trucks. Write for Bulletin and names of nearest Distributors.

THE PERFECTION STEEL BODY COMPANY GALION, OHIO

PERFECTION

TRUCK BODIES AND HOISTS

NEW PRODUCTS

(CONTINUED FROM PAGE 61)

lic Seal circulated at the proper temperature and pressure before reassembling and installing the engine.

The K & W Test Heads are used in conjunction with the circulator. They are made of aluminum alloy, for lightness, and cover only the areas over the cooling ports and stud holes in the block, leaving the cylinders, valve ports and surrounding areas open for easy inspection. Thus, internal cracks are easily found, and repair results observed before re-assembly of the engine.

Use Free Postcard For More Details.

P238. Solvent—Cleaner

The Radiator Specialty Co., Charlotte, N. C., has announced the development of two new products for cleaning radiators and cutting corrosion. The new detergent, Water-Pump Lubricant and Anti-Rust, is a specially prepared soluble oil for lubricating water pump bearings and seals. It contains, in addition, an anti-rust ingredient which is said to prevent the formation of sludge, rust and scale.

The second product manufactured under the trade name of Super Solvent Auto Cooling System Cleanser, is said to dissolve rust scale and sludge into a thin watery solution which flushes out as easily as water. The cleanser is said to be safe to use and not harmful to rubber hose, pump packings or delicate metal parts.

Use Free Postcard For More Details.

P239. Adhesive Gasketing

An improved type of gasketing is announced by the Products Research Co., Los Angeles, Calif. It is called Chrome Lock.

Chrome Lock Gasketing has an adhesive back. This makes it unnecessary to tie, lace or tape the gasket to vertical or inverted flanges. The gasketing can be finger-pressed onto

(TURN TO PAGE 152, PLEASE)

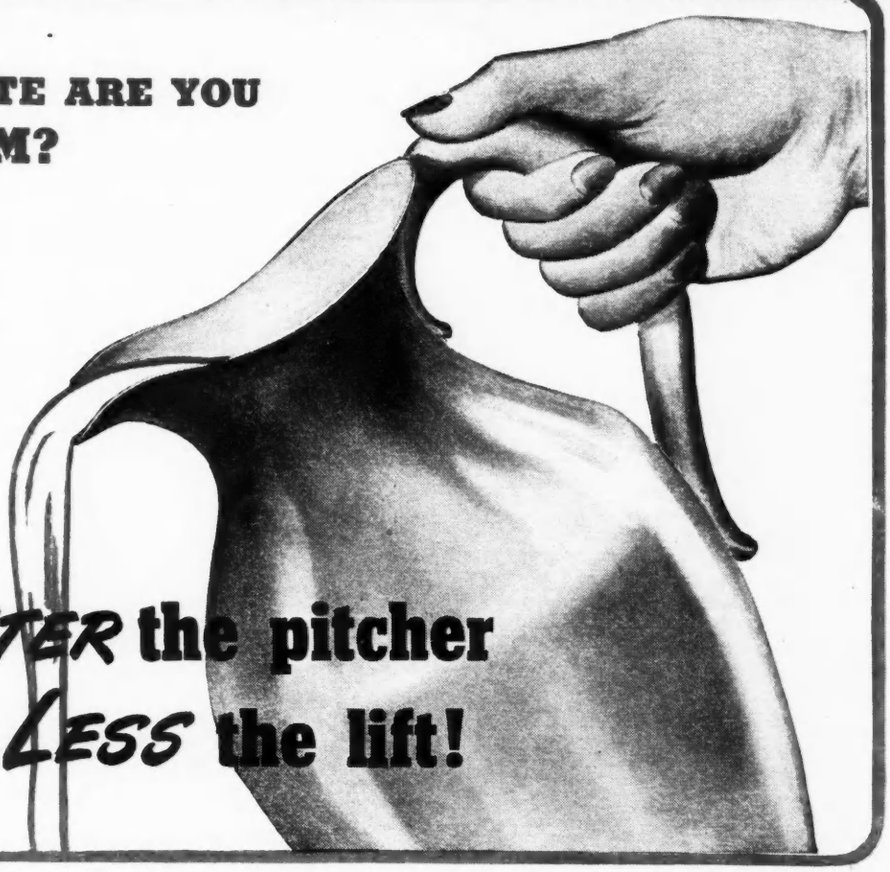
● WHERE'S HOMER?

ANSWER

(To Question on P. 146)

California leads in truck registrations with a total of 358,140. California also leads in passenger cars.

HOW UP-TO-DATE ARE YOU ON ALUMINUM?



The *LIGHTER* the pitcher ...the *LESS* the lift!

Pound for pound ... more payload!

Fleet owners are a lot like the woman with the aluminum pitcher in the illustration above, when they operate tank trucks or trailers built of lightweight, high-strength Reynolds Aluminum alloys.

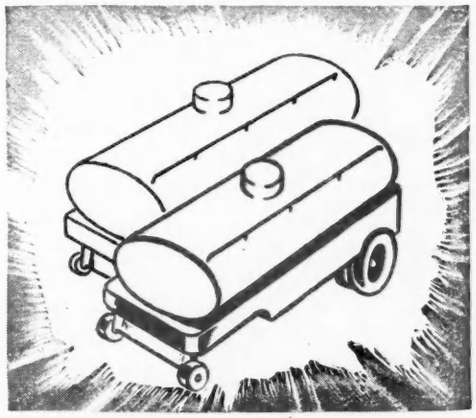
Because of better *payload-to-deadload* ratio, these vehicles turn in higher revenue. Operating costs also per *ton-mile* are lower because less gas-oil-and-tire money is wasted on non-revenue producing loads.

Furthermore, aluminum affects neither taste, odor, nor color of most liquids carried. Finally, it lasts longer, thanks to superior corrosion-resistance.

Why Reynolds? Because Reynolds offers aluminum in a great variety of alloys, tempers and forms—each designed to meet definite conditions! Because Reynolds is ready to co-operate with manufacturers in selecting the *right* material.

Get the facts! Reynolds has offices in principal cities. Phone nearest office ... or write Reynolds Metals Company, 2533 South Third St., Louisville 1, Kentucky.

Detroit Office: 1010 Fisher Building



Save up to ½ Body Weight. Reynolds Aluminum alloys, properly specified and used, reduce truck weight, insure a longer life, lower maintenance cost.

Consider Aluminum—Consult Reynolds

REYNOLDS METALS

REYNOLDS ALUMINUM

The Great New Source of

INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

NEW PRODUCTS

(CONTINUED FROM PAGE 150)

the surface and, it is claimed, will "stay put." This material is said to offer adhesion to metals without cementing the gasket to the flange, assuring a positive seal.

Use Free Postcard For More Details.

P240. Fender and Grille Guard

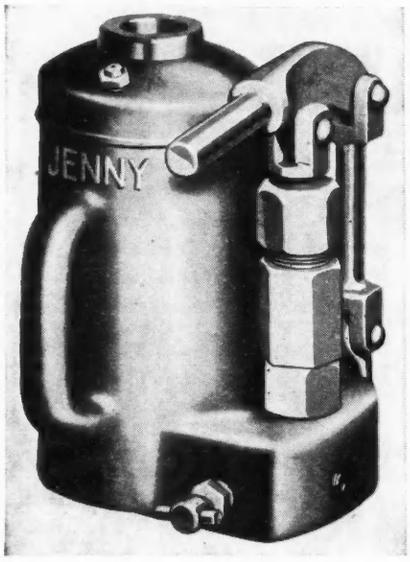
The Stur-Dee Fender and Grill Guard, manufactured by Voltz Bros., Inc., Chicago, is presented as a means of shielding trucks from the damage to grills, radiators and headlights which often results from comparatively minor accidents.

Types are available for late model ½ to 1½-ton Chevrolet, Ford, Dodge and International trucks, and some makes and models of heavy-duty trucks. Installation involves only the drilling of required holes and application of bolts.

Use Free Postcard For More Details.

P241. Hydraulic Puller

The "Jenny" Hydraulic Puller, manufactured by Wm. S. Pine, Los Angeles, Cal., pushes, pulls, lifts and can be easily rigged up as a portable press. It is self-contained and light



in weight, has its own back-up and is self-supporting because of its center hole construction.

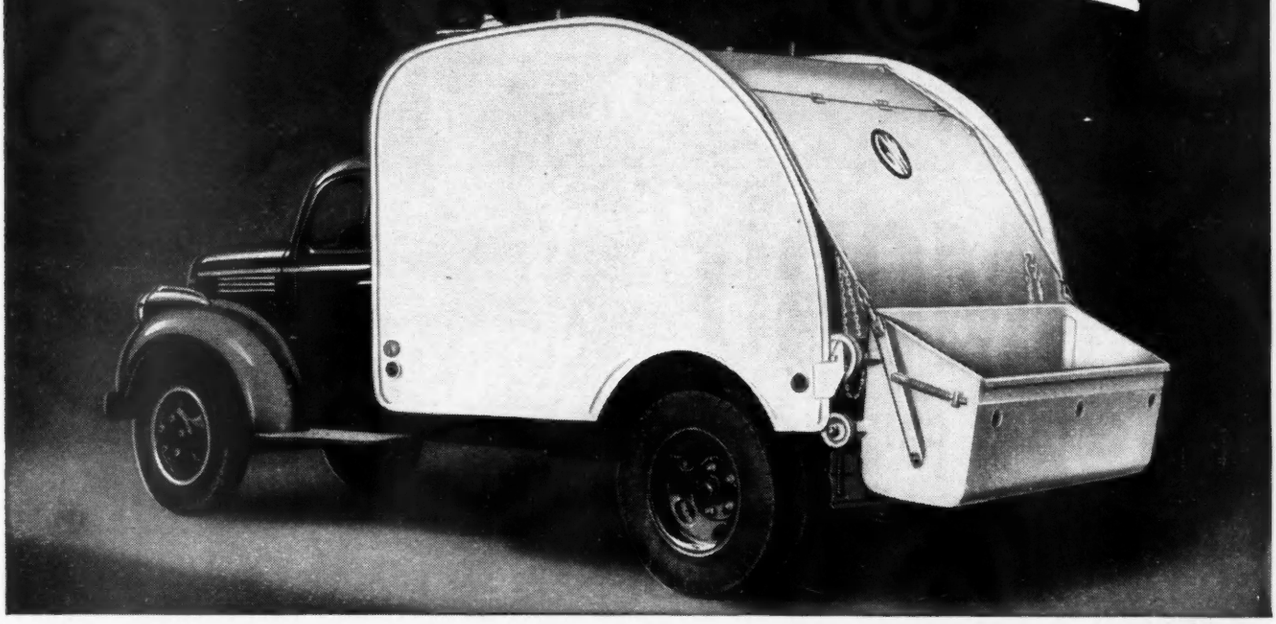
There are five models of pullers, 30 tons to 100 tons in capacity. No. 303, 30-ton puller, illustrated, is used to pull cylinder liners, to straighten

(TURN TO PAGE 154, PLEASE)

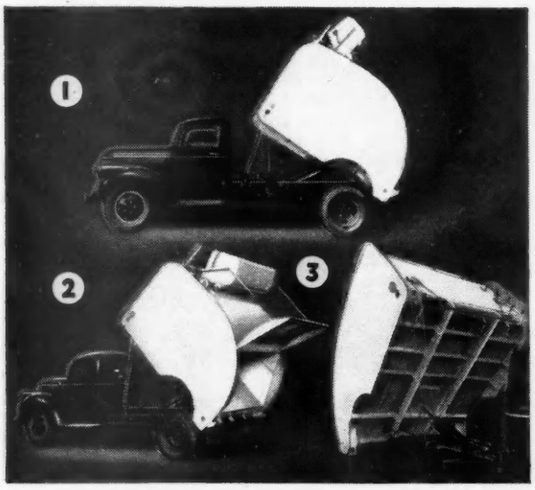
AVOID Expensive OVERTIME
BY CONTROLLING DELAYS AND IDLE PERIODS DURING WORKING HOURS
THE LITTLE SERVIS RECORDER DOES IT!
IT CORRECTS THESE Delays
IDLE
HELD UP
WAITING
WHAT CAUSES OVERTIME?
The answer is . . . all the various avoidable and unavoidable things that delay a truck during the day.
Now, overtime is sometimes necessary these days—and excusable. But not overtime caused by needless delays during the day . . . the truck standing idle time and again; couldn't get started in the morning for a whole hour, waiting for the load; or delayed by traffic jams caused by bad routing; or held up at the freight station for a couple of hours awaiting a shipment, etc., etc.
Reduce these idle periods and you reduce overtime. And there's only one way to do it accurately: Install Servis Recorders—they show up all delays, all day. Write for the full story.
Prevent this Idle Time and you Prevent Overtime
Busy Idle Busy Idle Busy Lunch Busy Idle Busy
THE SERVICE RECORDER CO.
1375 Euclid Avenue • Cleveland 15, Ohio
The Servis Recorder
Tells Every Move Your Truck Makes

Presenting the

GAR WOOD *Bucket Loader*



THE NEWEST in SANITARY REFUSE COLLECTORS



1 As body is raised, loaded bucket travels simultaneously to top of body—hatch cover automatically opens and closes. **2** With body elevated to 50° and tailgate opened, the load slides free. Easily kept clean. **3** Solid, welded steel body understructure. Hydraulic hoist and cable mechanism.

. . . takes its place in the famous line of GAR WOOD Municipal Equipment

The Bucket Loader, another Gar Wood achievement, was designed to meet the ever increasing need for an all enclosed, sanitary refuse collection unit to handle wet garbage, ashes, sweepings and other non-compressible refuse.

Because of its design features—its low cost and ease of operation, the Bucket Loader is an outstanding unit for municipalities and private operators.

GAR WOOD INDUSTRIES, INC.,
HOIST AND BODY DIVISION
7924 Riopelle Street
Detroit 11, Michigan
Please send Bulletin BL1 which fully describes the new Gar Wood Bucket Loader.

Name.....

Address.....

City.....Zone....State.....

GAR WOOD INDUSTRIES, INC.
DETROIT 11, MICHIGAN
WORLD'S LARGEST MANUFACTURERS OF TRUCK AND TRAILER EQUIPMENT
OTHER PRODUCTS: Hoists • Bodies • Winches • Cranes • Tanks • Road Machinery • Heating Equipment • Boats

NEW PRODUCTS

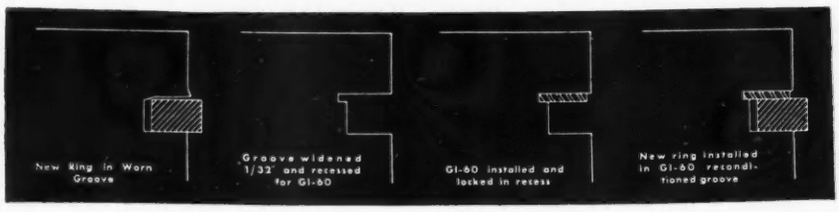
(CONTINUED FROM PAGE 152)

out bulges in plates and to do jobs of a similar nature. The 80-ton pullers are used to pull bushings, cylinder liners, pistons, wrist pins, valve seats, keys and gears.

Use Free Postcard For More Details.

P242. Piston Regrooving Tool

Sealed Power Corp., Muskegon, Mich., has introduced a new method of repairing wear in the top ring groove of pistons. This consists of a "contracting groove insert" and a regrooving tool which cuts a recess for the insert at the same time that it trues up and widens the top groove.

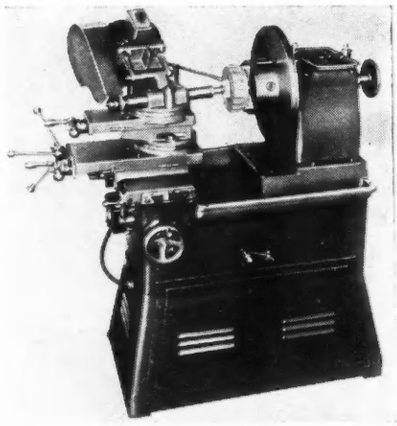

New Ring in Worn Groove
Groove widened 1/32" and recessed for GI-60
GI-60 installed and locked in recess
New ring installed in GI-60 reconditioned groove

This regrooving tool makes the worn groove 1/32 in. wider than the original groove and cuts at the same operation a recess 1/32 in. wide at the top of the groove. Into this recess is then fitted the "contracting groove insert," which, it is claimed, anchors itself permanently.

Use Free Postcard For More Details.

P243. Expansion Reamer

Lempco Products, Inc., Bedford, Ohio, announces a new design Dual-Spiral Expansion Reamer, with a solid one-piece body



This one-piece construction reduces the number of component parts. Because of its increased rigidity, the cutting blades spiral

(TURN TO PAGE 156, PLEASE)

MOBO

MEETS EVERY CAR WASHING DEMAND

EFFECTIVE

MOBO cleans and removes dirt, grease spots, dead insects, etc. Restores car lustre.

EASY TO USE

Simply apply solution with towel and hose off—no wiping dry necessary. Does a faster washing job of the entire fleet.

ECONOMICAL

A small amount goes a long way. Add an ounce of ***liquid*** MOBO SUPER AUTO WASH or a teaspoon of MOBO POWDERED CAR WASH to 12 quarts of water.

SAFE

Harmless to all finishes—including wax surfaces.

REPUTATION

MOBO upholds a 45-year reputation for customer satisfaction.

MOBO SUPER AUTO WASH and MOBO POWDERED CAR WASH clean trucks, buses and passenger cars in a time-saving manner and are demanded by the experts—fleet owners, car dealers, garage men and gas station owners.

GET YOUR ORDER IN NOW FOR PROMPT SHIPMENT

JOHN T. STANLEY CO., Inc., 642 West 30th Street, New York, N. Y.

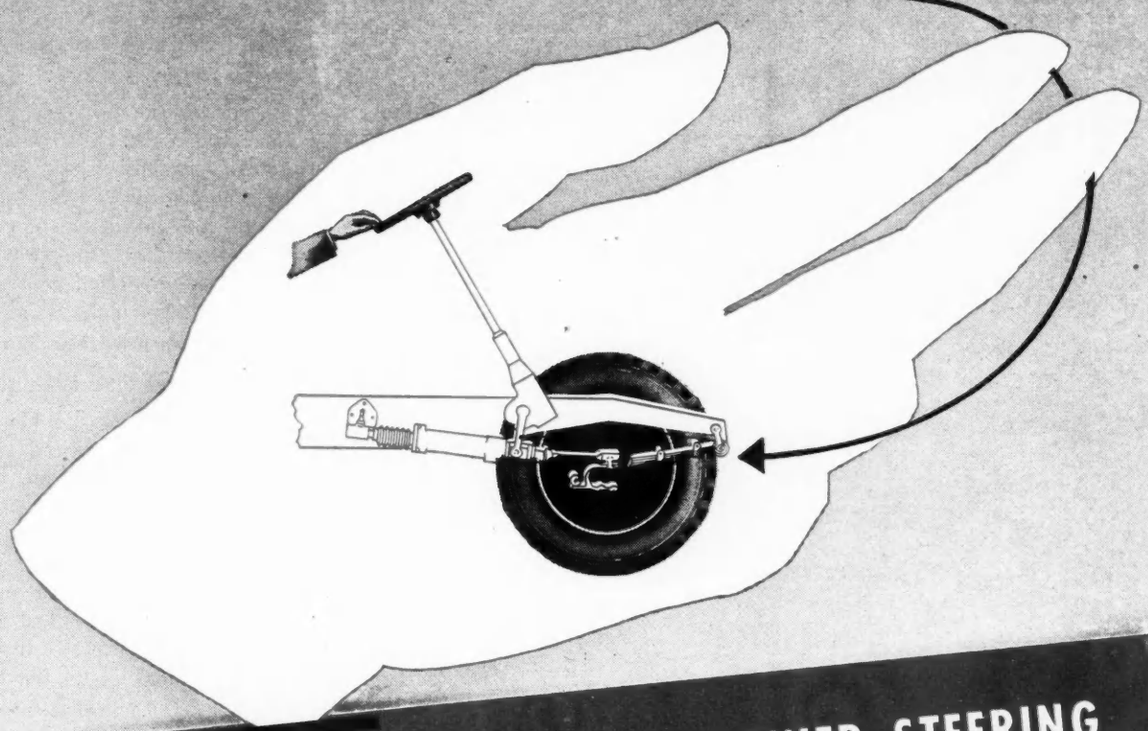
● WHERE WAS IT?

ANSWER

(To Question on P. 152)

New York. On April 25, 1901, the state of New York passed a law requiring all motor vehicles to be registeredwith the Secretary of State. Licenses issued bore the owner's initials and had to be at least three inches in height. The license fee was $1. $954 was collected the first year.

INSTANTANEOUS FINGER-TIP RESPONSE



with VICKERS HYDRAULIC POWER STEERING

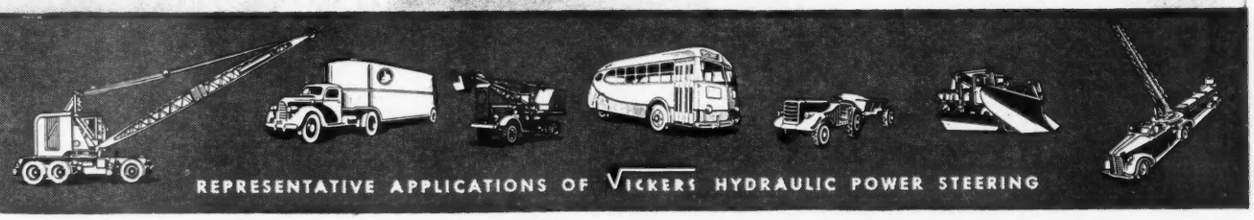
Two fingers on the steering wheel—it turns easily, and the front wheels of the heaviest truck or bus follow exactly. Vickers Hydraulic Power Steering does the work. And steering is just as easy over the roughest ground off the road as it is on smooth concrete. Road shock *cannot* be transmitted from the front wheels to the steering wheel or driver.

Steering is instantly responsive and firm—no rubbery feeling or wander. The driver is relieved of the most exhausting part of his job, enabling him to get more done with less fatigue.

Vickers Hydraulic Power Steering has many other advantages: (1) requires minimum space and is applied to most existing hand steering mechanisms with a few simple alterations; (2) automatic protection against abuse and excessive steering reaction forces; (3) automatic lubrication; (4) 15 years of successful operating experience. Ask for Bulletin 44-30.

VICKERS *Incorporated* • 1418 OAKMAN BLVD. • DETROIT 32, MICHIGAN

Application Engineering Offices: CHICAGO • CINCINNATI • CLEVELAND • DETROIT • LOS ANGELES • NEWARK • PHILADELPHIA ROCHESTER • ROCKFORD • TULSA • WORCESTER



REPRESENTATIVE APPLICATIONS OF VICKERS HYDRAULIC POWER STEERING

NEW PRODUCTS

(CONTINUED FROM PAGE 154)

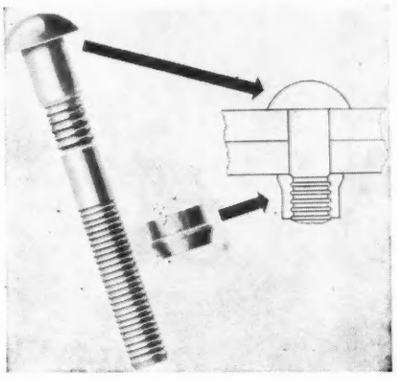
even more concentrically than previously, and run-out is held to a minimum, insuring accuracy to extremely close tolerances; it is stated.

Use Free Postcard For More Details.

P244. Improved Fastener

Known as the Huck Lockbolt, a new and entirely different type of fastener is announced by Huck Mfg. Co., Detroit, Mich. It consists of two parts: (1) A pin, which has a head of any desired type, locking grooves, a breakneck groove, and pull grooves which fit the jaws of the driving gun; and (2) a locking collar. The pin is inserted from the back side of the work; the collar is slipped onto the pin, and the gun is applied.

In rapid succession, the gun squeezes the work together between the collar and the head of the pin;



wire-draws the pin to a press fit in the hole when hole filling is required; swages the collar into the locking grooves in the pin; breaks the pin off flush with the collar; and frees itself from the swaged collar. Both hand-operated and pneumatic guns are available.

Use Free Postcard For More Details.

P245. Hand Fire Extinguisher

A new carbon dioxide fire extinguisher is announced by The B. F. Goodrich Co., Akron, Ohio.

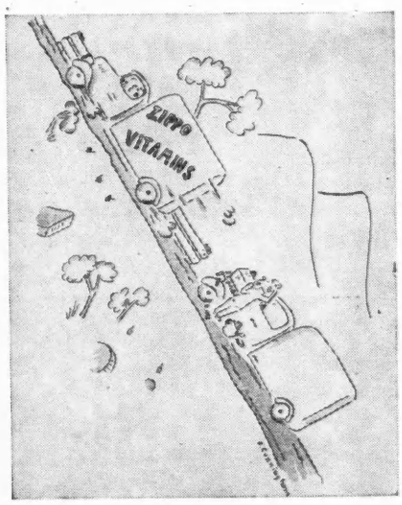
Made to meet the full approval of fire underwriters, the container holds four lb of carbon dioxide and comes with a carrying handle and control button designed for fast operation. It can be carried easily in one hand, with the thumb of the carrying hand operating the push button. A horn swivel quickly raises or lowers as needed, remaining in lower position when attached to the wall rack furnished with each extinguisher, together with a quick release chain.

Painted vivid orange and black for high visibility, the extinguisher may be recharged at regular fill service establishments.

Use Free Postcard For More Details.

(TURN TO PAGE 158, PLEASE)

PERFORMANCE
as great as the name
Edison
ALBANITE
UNITED STATES
ONLY AN EDISON HAS THIS PATENTED "SPUN-ON" LEAKPROOF GASKET
WHETHER IT'S A LONG OR A SHORT HAUL, you'll get the kind of performance you expect from a name like Edison. Edison's built-in "SPUN-ON" Leakproof Gasket insures delivery to the engine of all the power the cylinder is capable of producing. Gas goes where it will do a job . . . not out the exhaust-pipe.
Ignition trouble bothering you? Take advantage of Edison-Splitdorf's *Transportation Service Department*. They'll be glad to make *your* problems *their* problems . . . without cost to you.
See your Edison jobber for spark plugs and all other *quality* products.
Edison
SPARK PLUGS
Edison-Splitdorf Corporation, West Orange, N. J.



War-Proved Power for Post-War Hauling

You really have *pulling power* when you get a GMC under that heavy load! For its rugged, reliable, economical engine is a "blood brother" to the powerplant of nearly 600,000 GMC military vehicles. You can count on this battle-tested, war-proved power to handle your heaviest hauling jobs . . . to give you peak performance on cross-town and cross-country runs alike.

And that's not all! This ruggedness and stamina is part and parcel of every other GMC feature. Springs, axles, clutches, transmissions and brakes are designed to give models in each capacity range a maximum of strength and long-lived, economical performance.

GMC's wide range of models from ½ to 20 tons offers an ideal truck type for every type of transport job . . . pick-ups, panels, stakes and platforms . . . light, medium and heavy duty trucks and truck tractors . . . standard and cab-over-engine designs . . . optional equipment to fit individual hauling requirements. Get a GMC and you get a truck that's built for the job.

THE TRUCK OF VALUE **GMC TRUCKS** GASOLINE • DIESEL

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

NEW PRODUCTS

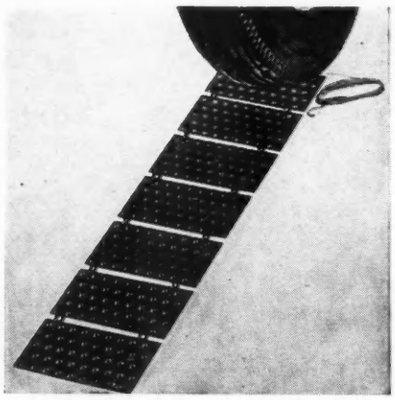
(CONTINUED FROM PAGE 156)

P246. Traction Plates

A new development of the Morton Mfg. Co., Chicago, is said to provide year-round traction for motor transportation vehicles by giving the wheels "footprints of steel" on all surfaces where traction fails.

This "Tire-Trac" consists of seven rigid but flexible plates of two-ply steel, electro-welded and linked together and designed for compact folding. Traction is provided by the Kass Tread non-slip tractive surface on these plates. Studs of steel grip the tire on the upper sides and cling to the roadway below.

The plates are placed ahead of the wheels when traction is needed, a pickup cable is connected to the bumper. After the truck pulls itself out, the device is dragged along with the vehicle until the driver can recover the Tire-Trac without the risk of stalling.



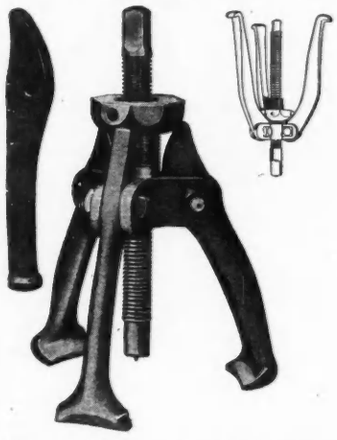
The device is rust-proof treated and is said to hold in mud, snow, sand or glassy ice. The steel plates of the track can be used as a firm base for a jack, when wheels must be raised from soft shoulders.

The heavy-duty model has a track 12 in. wide and 50 in. long. It weighs about 25 lb. A web belting carrier is provided with the device.

Use Free Postcard For More Details.

P247. All Purpose Puller

A new puller for wheels, pulleys and gears has been developed by the Scott and Ewing Co., Findlay, Ohio. The design of this Klay Puller is such that the pulling and gripping actions are independent of each other. It is thus claimed to develop great pulling power with a safe and positive grip on the object being pulled.



Klay Pullers are made in two and three-hook types for pulling anything from a 5/8-in. gear up to a 40-in. wheel or hub.

Use Free Postcard For More Details.

P248. Multi-Purpose Grinder

A 24-in. disc grinder now is available for reasonable delivery by The Kindt-Collins Co., Cleveland, Ohio. This grinder is adaptable to all kinds

(TURN TO PAGE 160, PLEASE)

AUXILIARY DRIVING LAMPS
FOR ALL WEATHER CONDITIONS

- QUALITY FIRST is the basis of "FOG KING" dependability.
- "FOG KING" is a name instantly recognized by experienced users.
- Powerful light penetration.
- Rugged construction for long carefree service.

We also manufacture "ROAD KING" with clear lens, far superior to average white headlights.

See your jobber, or write. Ask about the entire Teleoptic line of lighting equipment.

"Fog King"
SEALED BEAM
FOG LAMP • • •
QUALITY FIRST

THE TELEOPTIC CO.
1245 MOUND AVENUE RACINE, WISCONSIN

FOR UTMOST RELIABILITY IN THE HEART OF THE FUEL SYSTEM

AVAILABLE FROM THE AC WHOLESALER

Your AC Fuel Pumps give you such dependable service and long life because *highest quality is built in,* from blueprints to finished products. There is one sure way to protect that reliability and durability,—insist upon AC pumps and parts.

FOR REPLACEMENT—install new AC Fuel Pumps or Authorized Factory Rebuilt AC Fuel Pumps.

FOR REPAIRS—use AC Diaphragm or Parts Kits.

QUALITY FEATURES

- Careful control of pressure and flow assuring correct fuel supply.
- Accurate hardening, precision machining of parts essential to long life.
- Accurate control of spring tensions and temper.
- High, and controlled, pin hardness.
- 4-layer patented-impregnation diaphragms of special airplane cloth.
- Carefully finished rocker arm pads, located to center on cam.
- Split-hair rocker arm clearance and control of pad hardness.
- Uniform pull rod hardness at pin holes.

AC

FUEL PUMPS

SEND FOR AC SHOP MANUALS

Field Service Department, AC Spark Plug Division, G. M. Corporation
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

☐ How to Service Spark Plugs ☐ HOW TO SERVICE FUEL PUMPS
☐ How to Service Spark Plug Cleaner ☐ How to Service Air Cleaners
☐ How to Service Oil Filters ☐ How to Service Speedometers
☐ How to Service Ammeters and other Instruments CCJ-3

NAME_____
FIRM_____
STREET ADDRESS_____
CITY_____ STATE_____

Yes! ONE MAN NOW REMOVES BUDD DUAL WHEELS Easily!

Here's the most complete and efficient tool yet devised for this heretofore troublesome job. Both the double disc wheel cap nuts and the double cap inner nuts can be removed separately. As shown above, the short bar is used as a stop against the ground, thus holding the inner wrench and inner cap nut in place without turning while the outer cap nut is removed.

The outboard support jack is quickly adjusted for height with a novel self-locking devise. It permits exerting sufficient leverage to tighten or break loose the cap nuts.

No. 1201 Complete, includes outer socket, inner socket, 28" bar, outboard jack support, 1¾" box wrench and 36" bar handle. Units also listed separately.

ASK YOUR JOBBER or write for details

OTC TOOLS

OWATONNA TOOL CO.
335 Cedar St.
OWATONNA, MINN.

The COMPLETE Puller Line

NEW PRODUCTS

(CONTINUED FROM PAGE 158)

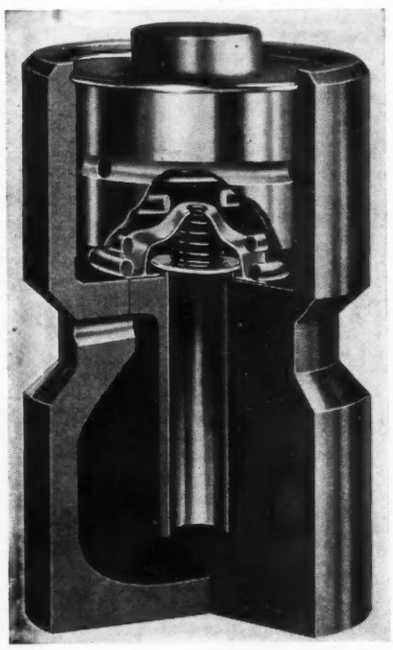
of grinding on metal, wood or plastics. The specific disc speeds required for grinding these three materials are available.

Two models of the grinder are available. Model A, illustrated, is furnished with its own dust collection system, and Model B is equipped with a 4-in. exhaust tube to be attached to the plant dust-collecting system.

Use Free Postcard For More Details.

P249. Hydraulic Valve Tappet

An automatic, self-adjusting hydraulic valve tappet has been introduced by Johnson Products, Inc., Muskegon Heights, Mich. It is available in either the mushroom or barrel form and is adjusted to operate



with zero clearance. With slight modifications in the cam form of the normal camshaft, it is claimed that the use of Johnson tappets will provide a quiet running engine, improved valve life, and an increase in power in some cases.

Use Free Postcard For More Details.

END

(Please resume your reading on P. 62)

Airco Offers Catalog

An up-to-date price list and catalog of Airco arc welding accessories has just been published by Air Reduction. New York, N. Y. Copies are available upon request.

REZNOR
Gas unit heaters

1. Will heat ANY size area.
2. Economical way to extend inadequate heating systems.
3. Easy, low-cost installation.
4. Clean, automatic heat.
5. Suspended, saves floor space.
6. Ideal for modernizing industrial and commercial buildings.

★

Propeller fan and blower types. Nine sizes of each.

REZNOR MANUFACTURING CO.
Since 1888
MERCER, . . PENNA.

NO BOILERS • NO STEAM LINES
NO FUEL STORAGE • NO FIRE TENDING

It's Our Business to Keep *You* in Business ... with SATISFIED CUSTOMERS

The ultimate desire in all business transactions is satisfied customers. Many of our vehicle owners are also your customers.

Surely the satisfaction they receive from the replacement parts installed in their vehicles is a matter of concern to *you* as well as to *us*.

To make certain that parts used for replacement in Plymouth, Dodge, De Soto, and Chrysler vehicles perform long and dependably, we have made it convenient and profitable for you to install MOPAR parts of new-vehicle quality and specifications.

By making these MOPAR factory-engineered and inspected parts readily available to you through a nationwide network of authorized dealers, we have ensured that your customers, who are our owners, get the right parts when needed quickly.

The millions of Plymouth, Dodge, De Soto, and Chrysler owners comprise a big family. It pays YOU . . . it pleases US . . . to KEEP THEM SATISFIED, and satisfaction builds business for *both* of us.

USE MOPAR PARTS FOR:

Plymouth

DODGE

DeSoto

CHRYSLER

DODGE Job-Rated TRUCKS

USE CHRYSLER CORPORATION PARTS DIVISION

MOPAR

TRADE MARK

PARTS AND ACCESSORIES

FACTORY ENGINEERED AND INSPECTED

Hear America's Most Popular Conductor . . . Andre Kostelanetz and his "Music Millions Love" with famous guest stars—Thursday, CBS, 9 P.M., E.T.

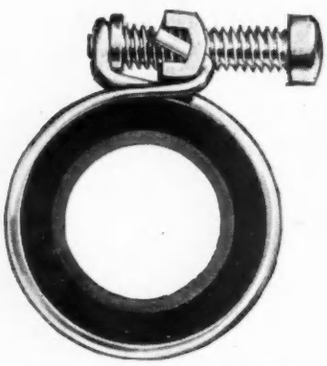
NOTE TO ALL REPAIR SHOPS

If you need parts of any kind for a Plymouth, Dodge, De Soto, or Chrysler, obtain them from a dealer for these vehicles.

CHRYSLER CORPORATION—PARTS DIVISION, DETROIT 31, MICHIGAN

THE *only* HOSE CLAMP THAT WORKS ON A PRINCIPLE THAT'S

NEW!



ONLY the CENTRAL "360" HAS *ALL* THESE FEATURES

"By every test 360's the best"

ONLY THE "360" forms a complete circle, with no "blind spot."

ONLY THE "360" has the new "push-pull" power principle.

ONLY THE "360" has such a wide margin of take-up on the screw.

ONLY THE "360" applies pressure all the way around the hose *evenly.*

ONLY THE "360" insures absolutely the absence of leakage.

Write today for your FREE sample of Central's "360" Wire Hose Clamp and Bulletin Number 3446.

CENTRAL EQUIPMENT CO.
900 S. Wabash Ave., Chicago 5, Ill.

DRIVERS AS I KNOW THEM

(CONTINUED FROM PAGE 57)

. . . driving the caissons at Chateau-Thierry . . . the Stage Coach to Deadwood . . . the Red Ball Express in Normandy . . . Texaco Town . . .

U. S. Route 20 . . . hamburgers . . . hot dogs . . . cold beer . . . no power . . . where's the 'phone? . . . Boss, I got 25,000 on . . . the ice is bad . . . at Whosis Corners . . . come and get me . . ."

REPORTER: "Drivers get along pretty well together then?"

O'LEUM: "One for all, and all for one, against the world. And the finest intelligence system in the world. Done some way with grapevines. Why they had radar for spotting patrolmen long before the war. You've seen them blink lights at each other. Well, they're messages. Something like this:

'Her husband's home.'

'Nosey the Patrolman is out.'

'Fresh sausage at Texaco Town.'

'Lady driver approaching.'

"And those mysterious messages on their trailers. Who knows what they mean? For example,

'Just wink and I'll do the rest.'

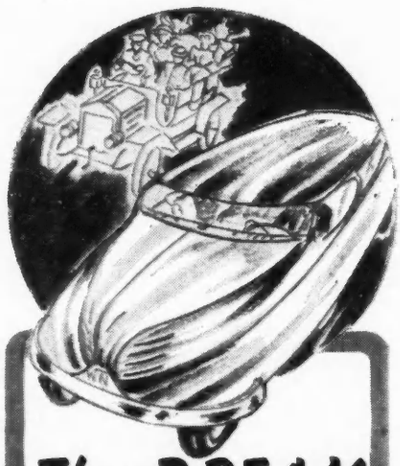
'Jerkey is coming.' . . . and this

'Herman is a jackass.' . . . Cryptic, eh?

"But there's one message that burns them up. It's three quick flashes of rear cluster lights from a brother driver who has just passed them. It means, 'Nuts to you.' Yes, it's pretty serious business when one of the Old Timers is passed by another outfit. We can all tell it when he comes in . . . with a face of thunder. Mechanics and Foreman tremble. The Foreman silently hands him form XXX, a double length work sheet, and he starts to write:

'This is a doozie. Hasn't enough power to get out of it's own way. Stops at every pimple in the road. Bad. Front-end shivers, transmission chatters, rear-end growls. Very poor. Front brakes grab, rear ones won't hold. Discouraging. Tighten

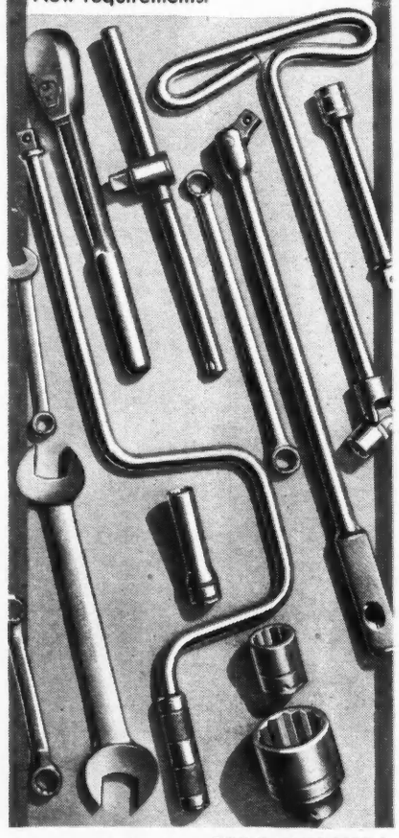
(TURN TO PAGE 164, PLEASE)



The DREAM of the Future

The first Automobiles in America carried Tool Kits made by **WALDEN WORCESTER.**

The New Automobiles will carry less tools: But the Mechanics—will need New Tools designed by **WALDEN WORCESTER** Engineers to meet the New requirements.



Send for Catalog No. 141 picturing a full line of Automobile, Aircraft and Radio Tools.

WALDEN WORCESTER WRENCHES

STEVENS WALDEN, INC.
468 SHREWSBURY STREET
WORCESTER, MASSACHUSETTS

WHY DOES A TRUCK'S ORIGINAL FAN BELT LAST SO LONG?

TRY A
Dayton Belt
ON YOUR
SPEEDOMETER
The speedometer will tell you, for us, far more than we could begin to say for Dayton—the Original Equipment Belt.

You've probably noticed how a fan belt on a new truck seemed to last and last and last.

Have you also observed, after the truck's original belt was finally replaced, that often the replacement soon gave up?

If these are your experiences we believe we have a worth-while *fact* and a *profitable suggestion* for you to consider.

The Fact. Dayton Fan Belts are original equipment on 85% of all makes of trucks. That's why the original fan belt usually lasts so long.

The Suggestion. Buy a few Dayton's and use them for your replacement needs. See for yourself how a replacement can give the same surprisingly long service you get with original equipment.

Dayton Fan Belts are available from jobbers everywhere. Phone for a few right now. The Dayton Rubber Manufacturing Company, Dayton 1, Ohio.

TRUCK BELTS *by*

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

DRIVERS AS I KNOW THEM

(CONTINUED FROM PAGE 162)

up from top to bottom and stem to stern. Cheap tractor. AND FOR X's SAKE FIX THE WINDSHIELD WIPER. IT WOULD'NT MOVE A SNOWFLAKE.'

"So they fix his windshield wiper."

REPORTER: "Pretty smart cookies, I'd say."

O'LEUM: "Smart? They're highway transportation engineers. Why old 'Pop' every minute of the trip automatically figures grades, loads, gear ratios, wind velocities on a round or square nose trailer, pressures in his tires at different speeds, spring torsion, oil viscosities, cylinder compression, and how many doughnuts he's eaten on the trip for ballast. But it's a funny thing the simple mistakes they can make in figures. If an outfit passes them on a hill they're carrying 25,000, but if they're telling the Foreman of lack of power they'll say the same outfit had only 10,000 on and coudn't make Paradise Hill. And take greasing, when writing work sheets they invariably say 'it hasn't been greased in six months' when the grease card shows two weeks."

REPORTER: "They must be pretty good mechanics, too?"

O'LEUM: "Well, I'll tell you. 'Pop' can tell if his watch is on the beam, too. But they all have pretty much the same cure for ignition troubles. First, hit the carburetor a sharp blow. If nothing happens, tap the regulator cover two or three times. Then some of the Old Timers take a good crack at the generator with a ballpein hammer. If none of this works, they then announce loudly, 'It needs a new battery.'

"The other day we had a call from a new Driver who said: 'There's something wrong. There was a big puff of smoke from the engine. When I lifted the hood the oil stick blew out of the pan . . . It's still smoking . . . I think it's the fan belt!'

"But they have their moments, too, with the mechanics. They like to tell about Clancy the mechanic who was sent out to road test a new Driver and when the Terminal Manager asked him if the man was an offensive driver, Clancy said: "Well, I didn't smell anything." And of course there's the famous case of the Shop looking for a skip in a Brock —they road tested and road tested, changed heads, and put in a new ignition system, without results. And a smart Driver lifted up the hood and noticed a little chain swinging loosely from the oil filler cap, and that was it! When running on the road the swinging chain was shorting No. 1 plug."

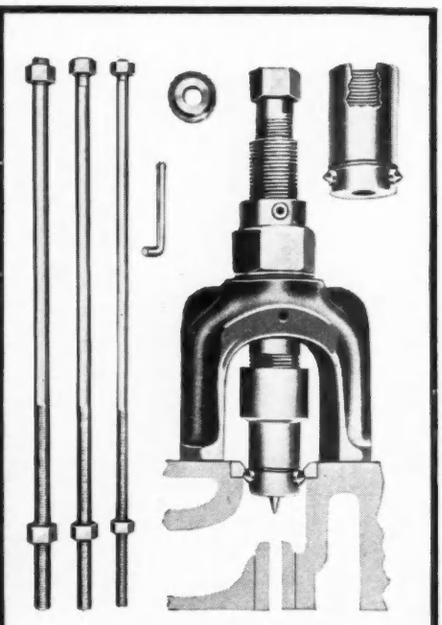
REPORTER: "Are there any other things about Drivers that can be mentioned, Mr. Oleum?"

O'LEUM: "Well, they're probably the world's greatest coffee drinkers and doughnut dunkers. But that's simply a reversion to the old days when their fathers drove stage

(TURN TO PAGE 166, PLEASE)

PULL VALVE SEAT RINGS and VALVE GUIDES EASILY QUICKLY SAFELY with the NEW

BISHMAN VALVE SEAT RING and VALVE GUIDE PULLER



No more risky, damaging, time-wasting prying or hammering. Just set the BISHMAN PULLER on the motor block as shown above, turn screw to set 3 hard sharp points under the ring, then turn large nut with wrench to pull out the ring. Both puller sets, plus #810A Head, will service all car, truck, tractor and bus engines having valve insert rings with inside diameter of from $\frac{15}{16}$" to 8¼".

Pull Valve Stem Guides without taking out motor. Use same fixture; it has a hollow center through which to slide pull rods. Each Puller Set packed complete in steel box with two extra sets of points—a great time-saver and man-saver.

No. 810 set, for rings 1⅛" to 2"
No. 811 set, for rings 2" to 3¼"
No. 810A, Small Head only, for rings $\frac{15}{16}$" to 1⅛"

ASK YOUR JOBBER or WRITE US

BISHMAN MFG. CO., OSSEO, MINN.

BISHMAN

AMERICAN BANTAM "Trade Approved" Trailers are now on the road! Built into them are all the features that trailer men told us they wanted.

We will be in mass production as soon as sufficient materials are available. So keep your eye on American Bantam for "Trade Approved" Trailers... coming soon!

SUPERCARGO

BANTAM

TRAILERS

ARMY E NAVY

AMERICAN BANTAM CAR COMPANY • BUTLER, PENNA.

DRIVERS AS I KNOW THEM

(CONTINUED FROM PAGE 164)

coaches; they naturally pull up at every diner. And they're lonesome and away from home so they yearn for lights and laughter and girls. Look at the girls' pictures in their cabs . . . just a reminder of home. Of course, too, they often have trouble at home because of their sleeping habits. You see they get accustomed to sleeping crossways in a cab seat and they naturally try to sleep crossways at home in their own bed. I understand one Driver has solved this very simply, though. He has an L-shaped bed; he sleeps crossways and his wife sleeps up and down . . . Fun, eh?"

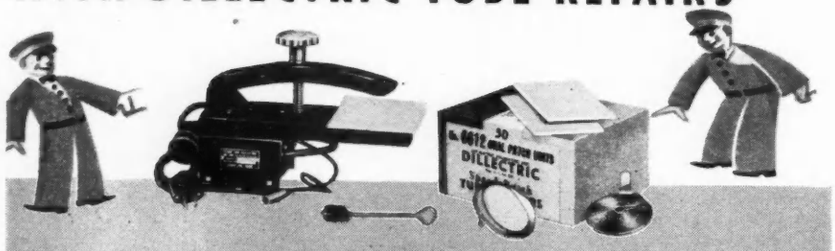
REPORTER: "Well, I guess I must be leaving, Mr. Oleum. Thanks mucho, as we say in Spanish . . ."

OLEUM: "Oh, it's nuttin', as we say here. You must be well oiled with pop by now . . . Come again, any time . . . Wonder where's that bottle of radiator flush . . . Had it right here between us . . . that's very, very, funny . . . Mm, mm, mm . . . Here, let me smell your bottle of pop . . . Hm, Hm . . . Smells funny . . . Say you don't think you could have . . . NOW, NOW, Mr. Reporter, control yourself . . . Please, Please . . . Don't stare at me like that . . . Don't tear at your collar so . . . Don't roll on the fl . . . Say, here's that radiator flush . . . You didn't drink it . . . .There, you're all right now . . . Here, let me help you to your car . . . The next time you come I'll have a different flavor for you . . ."

END

(Please resume your reading on P. 58)

YOU GET ALL THESE ADVANTAGES WITH DILLECTRIC TUBE REPAIRS



THE HANDIEST — QUICKEST WAY TO SAFELY REPAIR ALL TYPE TUBES

STRONGER REPAIRS

A Dillectric repair fills, reinforces, vulcanizes the tube injury completely safe. No guesswork—no failures.

NEATER REPAIRS

Dillectric makes a smooth feather-edge repair every time. So neat it looks like and is a perfect job of workmanship.

NO FIRE HAZARD

Underwriters' UL Laboratories

Every Dillectric Clamp carries the seal of approval of the Underwriters' Laboratories. Safe for gasoline stations.

NO SMOKE NO FUMES

Clean electrical operation. Does not smoke or smell up shop with obnoxious odor. Impresses customer with modern equipment.

AUTOMATIC Never Fails

Time and temperature of vulcanization is controlled by automatic shut-off. No guessing—no watching. Perfectly vulcanized repairs every time.

HANDY

All Dillectric Patch and Valve Stem Units come ready-prepared. No waste — quick to use — easy to inventory.

FASTER

It takes only a few minutes to complete a repair. Dillectric works in the quickest possible time for perfect vulcanization.

COMPLETE Handles Everything

Round and oval patches, valve stems, heavy duty truck patches—all types of repairs in all tubes — synthetic or natural rubber.

LOW COST MONEY-MAKER

Dillectric Patch Units cost less than 4c each. Yet, Dillectric repairs usually sell for 50c or more.

ATTRACTS MORE CUSTOMERS

Car owners know electric vulcanizing is best. Your Dillectric Outfit shows them you make safe, modern repairs.

OVER 75,000 STATIONS USE IT

Dillectric is No. 1 in tube repair service—the handiest, quickest way to safely repair all type tubes—used by over 75,000 service stations.

RECOMMENDED by All Leading Tire and Oil Companies

OK

Dillectric is universally approved and recommended. Your tire company, oil company, or jobber can supply you.

DILLECTRIC
Electrically VULCANIZED TUBE REPAIRS

Instruction Manual **FREE**—Pictures and describes the proper preparation of synthetic tube injuries for safe, permanent vulcanization.

THE DILL MANUFACTURING CO.
700 E. 82nd St., Cleveland 8, Ohio

BRANCH—1011 S. Flower St., Los Angeles 15, Calif.

DETROIT DISPATCH

(CONTINUED FROM PAGE 39)

good possibility that Chevrolet also will get back into production during March. However, the outlook for real volume output is dim.

Scramble for Parts

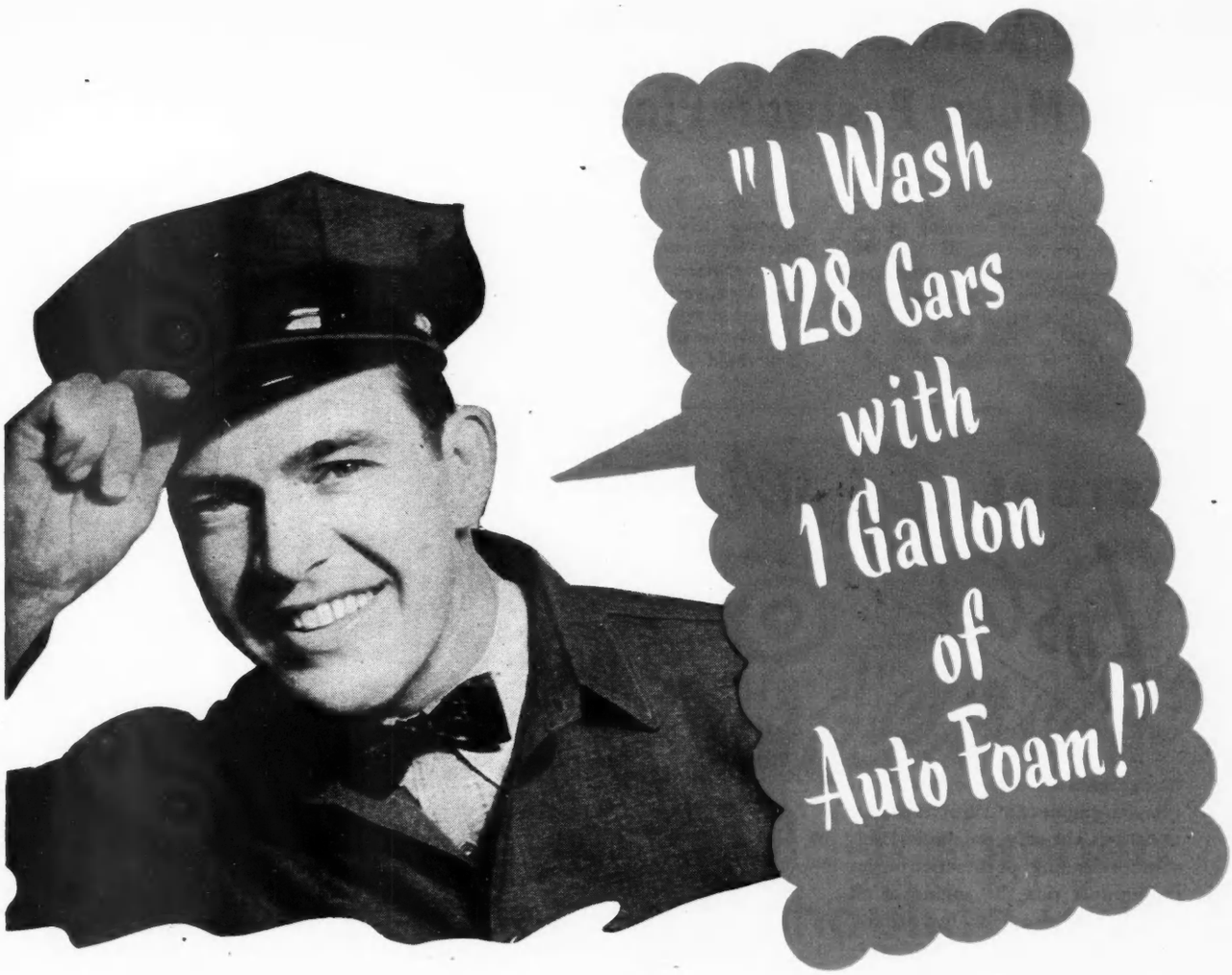
One manufacturer predicts the greatest scramble for suppliers the industry has ever seen. In fact, some companies have continued or resumed operations when limited volume means big losses, for the sole purpose of cornering suppliers. One industry spokesman says it will take at least six months, based on past experience, to adjust prices on components. Until that is done, many parts makers will not produce. He looks for a continuation of the spotty, catch-as-catch-can production we've had since V-J Day, with trucks often piling up in storage for lack of one or more vital parts. No one here will estimate what production to expect this year, but it now is obvious that the industry will be lucky to hit prewar volume this year. The estimate of 1 million trucks in 1946 already has been shaved by 200,000 and even this figure is said to be too high.

END

(Please resume your reading on P. 40)

JO OFFERS NEW CATALOG

A new catalog on the JO line of torque wrenches is available free upon request from the Jo Mfg. Co., South Gate, Cal. Besides specifications of all tools, the catalog gives complete tables of suggested torque values for automotive and repair work.



Yes, that is the amazing economy of AMEROID Auto Foam. One ounce cleans a car—removes all dirt, grit, grease and color-dulling traffic film to leave bright, streak-free surfaces.

AMEROID Auto Foam speeds up car, bus and truck washing. It dries *without* wiping—*without* chamoising. More cars can be washed per man hour to step-up profits.

AMEROID Auto Foam cleans all painted surfaces—chrome, nickel and glass with *complete* safety. Used as directed, it also cleans upholstery to make cars new looking—inside and out.

DEALERS!

There are 10 other fast-selling AMEROID Automotive Maintenance Products. Send in the coupon and learn about the AMEROID money-making setup.

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AUTOMOTIVE PRODUCTS DIVISION
15 E. 26th Street, New York 10, N. Y.
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E. F. DREW & CO., INC.

I am interested in AMEROID Auto Foam and all eleven AMEROID Automotive Products. Please forward full information.

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203

Private Truck Owners Make Postwar Plans

A SIX-POINT postwar program for the benefit of the operators of the nation's private motor trucking fleets—comprising 87 per cent of all registered motor trucks—was considered during the crowded two-day Annual Meeting of the National Council of Private Motor Truck Owners, Inc., held on Febuary 7 and 8 at the Stevens Hotel in Chicago.

There were more than 400 delegates from about 30 states, as spokesmen for approximately 3,500 large and small operators of private motor trucks. President R. J. O'Hare, Sheffield Farms Co., Inc., New York, gave the start-off signal, through his annual report which summarized Council wartime accomplishments and the outlook ahead.

He reported that more than a year before war hostilities had ended, the Council had begun to work out its present "6-point" postwar program:

1. Oppose all attempts to create a monopoly in transportation by depriving producers, distributors, merchants and other citizens of their right to own and operate facilities for the private transportation of their own property.
2. Reduce highway accidents.
3. Promote wider, more efficient and economical distribution of goods and services.
4. Remove legal barriers to the free flow of commerce among the States and between communities.
5. Encourage the development of a well planned and economical highway system to meet the Nation's anticipated transportation requirements.
6. Pay a fair share of the cost of building and maintaining highway facilities, but oppose diversions.

In a talk on "Peacetime Threats to Private Truck Operation," W. H. Ott, Jr., Kraft Foods Co., Chicago, chairman of the Council's Legislative Committee, said that in his opinion it will require one to three years for private motor truck owners to rehabilitate their fleets; and he expects that within five years there will be a large total increase in their vehicles This increase will come, he thinks, because so much of the efforts of the for-hire operators will be absorbed by their rate fight with the railroads that they will lack "either ability or desire" to expand their equipment facilities to meet the special-service needs of their individual customers.

He listed taxation as an additional "threat" to the private operators, and another sphere of probable conflict will be with Government agencies. This especially would include ICC regulations, through interpretations of what is interstate commerce as related to distinctions between for-hire and private motor carrier transport operations.

ICC District Director Frank Purse was questioned about the meaning and purpose of the pending "Wheeler Bill" (Senate bill 1291) and whether it was the ICC intention further to regulate private motor trucking operations. He declined to express any official opinion. One delegate later declared that this bill was "dynamite," and moved that the Council should vigorously oppose it. The motion was amended to a more generalized one stating that the Council should oppose any action by Congress with intent to further extend ICC power to regulate the operations of private motor carriers. This motion was unanimously carried.

Following are the newly elected officers: **President, R. J. O'Hare, Sheffield Farms Co., Inc., New York; eastern vice-president, George Faunce, Jr., Continental Baking Co., New York; central vice-president, O. A. Brouer, Swift & Co., Chicago; western vice president, P. H. Ducker, San Francisco; southern vice-president, E. M. Fetherston, Jr., Colonial Stores, Inc., Norfolk, Va.; treasurer, Robert C. Hibben, International Assn. of Ice Cream Mfrs., Washington, D. C.; managing director, Leon F. Banigan, Washington, D. C.**

RESTORE *Lost Power*

Sludge, gum and acid accumulations rob your engine of much of its power. **LOOSITE** is the safe, economical solvent for cleaning out these petroleum residues. It rids the engine of all sludge and gum quickly by reaching every working part—restoring *original* power. **LOOSITE** makes your engine "clean as a whistle".

After this simple **LOOSITE** treatment, add a can of **SILOO** with each change of crankcase oil and your petroleum residue problem is solved for good. **SILOO,** the seven-solvent liquid compound, *keeps* the engine clean by dissolving all *new* sludge and gum formations. It prevents rust, acid formation and corrosion. **SILOO** becomes part of the lubricant itself and cannot be removed by any standard filter.

A **LOOSITE-SILOO** treatment will show immediate results on any make truck or bus, regardless of quality or brand of oil used. Fifteen years of service to fleet owners and private operators endorses its use.

For sale by leading jobbers everywhere and White Motor Company branches and distributors.

SOLVENTS FOR ALL TYPES OF PETROLEUM RESIDUES
Petroleum Solvents
CORPORATION
General Offices: 331 Madison Avenue, New York 17, N. Y.
Plants and Laboratories: Port Reading, New Jersey • Petroleum Solvents Corp. of Canada, Ltd., Dominion Square Bldg., Montreal

If you heat with oil — write for information on
SILOO FUEL OIL TANK SOLVENT

Modernize old-fashioned milk hauling with Heil *Stainless Steel* Milk Transports . . .

Compare tank-hauling with old-fashioned can method

1. A Heil "Trailerized" tank weighs far less than conventional tank-on-trailer combinations and less than half as much as a can-hauling trailer with its dead weight of cans.
2. Compare the savings in time and cost and the convenience in handling and cleaning one 2500-gallon Heil Tank and 250 ten-gallon cans.
3. When using 10-gal. cans, there is more than 400% more metal in contact with the milk, which means 4 times as much heat transfer. Heil tanks have a 2½" thick insulation to keep milk temperatures where they belong.
4. The Heil Co. built the first stainless steel milk transport tank and has been building two out of every three (more than all other manufacturers combined) ever since.

These modern, streamlined tanks give you extra payloads, more profits, less trouble

Heil Milk Tanks are good-looking . . . they're modern . . . they indicate progressiveness. But more than that, they are profitable to operate. Heil design minimizes dead weight and assures bonus payloads . . . 100 to 350 gallons on every trip. Lower operating costs result from easy pulling, less side-sway. . . . The Heil Co., first (1927) to use stainless steel in tank construction, offers you the experience, facilities, and record of advanced design that assure you of making a wise investment — a decision that reflects credit on you for years to come.

See your nearby Heil distributor.

T-185

ARMY E NAVY

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

TRAINING PROGRAM

(CONTINUED FROM PAGE 56)

instance, of providing a man with 1000 hours of continuous training on brakes alone. Accordingly, considerable flexibility is provided and the general rule adopted that 1000 hours equals six months.

A trainee may either work in the brake department of a given shop for six months or he may work on a variety of units in any given period. The important factor is that the apprentice must be given training in the various phases of the program over the four-year period. It is possible for an apprentice to obtain credit for work done before entering his apprenticeship or for proficiency during the program.

Uniform Grading System

TO ASSURE uniformity in this grading system, each apprentice is given a booklet containing a separate work sheet for each of the 19 major phases. One of these is shown in Fig. 1. On the back of each sheet is a uniform training record providing entry spaces for his place of employment during the period, the months he actually worked on a given subject, the comments of shop employer, the courses taken in classroom work, the grades attained and the comment of instructors. One of these forms is reproduced in Fig. 2.

Normally, the average shop which is fully equipped might provide sufficient training for the entire program. However, in exceptional cases where this is not possible the expected procedure in Richmond is to effect a series of mutually agreeable "swaps" between different shops. Thus a student might get his 1000 hours (six months) of engine overhaul in a properly equipped jobber shop, then swap jobs with another apprentice who may have completed a phase of similar duration in a body specialty shop or several shorter phases totalling approximately the same length of time in less specialized shops.

It is apparent that under this plan a given shop might hire an apprentice at the beginning of his training program for the minimum apprentice wage, then three years later hire another man near the end of his course and have to pay him a considerably higher rate even though he knew no more about the particular specialty than the first man. However, it is anticipated that this wage differential will be more than made up in the increased overall capabilities and adaptabilities of the individual.

To iron out any of the problems arising from these situations, and to hear grievances on the part of either employer or apprentice, the six-man Appenticeship Committee identified above, is established on a permanent basis and meets at weekly intervals.

Apprentice Qualifications

TO BE enrolled in the apprentice training program the veteran must successfully hurdle the following specific obstacles:

1. He must find an employer willing to hire him for a period of at least sufficient duration to complete the majority of the 19 phases of the training program. In this the veteran is assisted by the Veterans Administration and the United States Em-

(TURN TO PAGE 224, PLEASE)

Where WILL YOUR 1946 EARNINGS COME FROM?

They'll come largely from the trucks that have been serving you faithfully all through the war years. So give them the best of care until you can replace them. One of the important things to do is to balance the wheels regularly, thereby eliminating destructive vibration. You'll find that wheel balancing, besides lengthening the life of your trucks, will save you many major repair bills.

HARLEY C. LONEY CO.
16877 Wyoming • Detroit 21, Mich.

L&H

SEND for wall chart showing the pounding effect of unbalanced wheels.

WHEEL BALANCING WEIGHTS

Easy as A B C to Cover all 3

With Just ONE NIEHOFF Service Stock You Can Service ALL 3 Major Auto Ignition Systems

These new service stocks speed up locating parts, also reordering, and cover all your ignition parts needs for the 3 Major Auto Ignition Systems.

Check These Advantages

✓ One Stock ✓ One Catalog
✓ One Code ✓ One Order

They'll be *available soon*, so don't delay, order from your jobber today.

C. E. NIEHOFF & CO.
4925 Lawrence Ave., Chicago 30, Ill.

BRANCHES: 1342 S. Flower St., Los Angeles 15, Calif. • 250 W. 54th St., New York 19, N. Y.

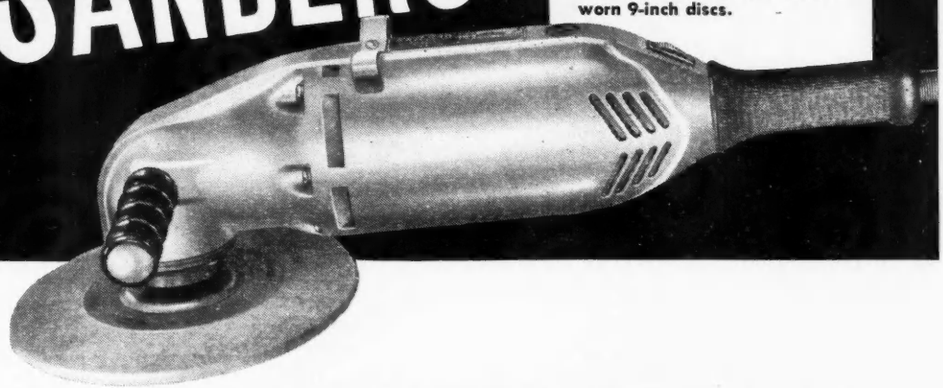
Niehoff
APPROVED QUALITY PRODUCTS

RETURNING SOON

these popular 2-speed double duty

SKILSANDERS

"SP" SANDER-POLISHER
4200 R.P.M. for sanding with 7-inch discs...1300 R.P.M. for polishing with lamb's wool polishing bonnets.



"H2" 7-in., 9-in. DISC SANDER
2700 R.P.M. for 9-inch sanding discs...4200 R.P.M. for 7-inch discs cut down from worn 9-inch discs.

For many years both of these 2-speed SKILSANDERS were favorites in service shops everywhere. Then came the war and we couldn't make them because of restrictions on materials. But now they're back in production . . . and soon your jobber can demonstrate them on your own work.

These SKILSANDERS are quality-built throughout for long, trouble-free service . . . with outstanding features such as extra-capacity motors with self adjusting brushes, accurately machined, heat treated gears, heavy duty ball bearings on all shafts, dust-proof brush and commutator compartments. Be sure to specify SKILSANDERS by brand name when you call your jobber for a demonstration.

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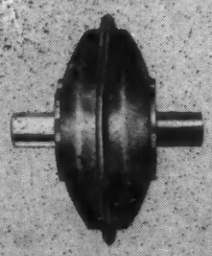
5033-43 Elston Ave., Chicago 30, Ill. • *Factory Branches in All Principal Cities*

PORTABLE ELECTRIC

SKILTOOLS

MADE BY SKILSAW, INC.



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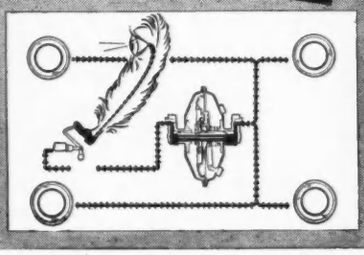

Write for the complete Vacdraulic catalog of engineering and installation details today.

TRAINING PROGRAM

(CONTINUED FROM PAGE 222)

ployment Service, the latter acting as a clearing house between employers and prospective trainees.

2. He must personally meet the committee at one of its weekly meetings and convince them of his sincerity, reliability and adaptability to successfully complete the program. The record shows that more than 50 per cent have eliminated themselves at this "hurdle."

3. He must obtain documentary evidence that he served for at least 90 days during the period of the World War II emergency and that he received a discharge other than dishonorable.

4. He must sign a written agreement with his employer stating that he intends to complete the entire training program, and abide by its regulations, and a further written contract with the Federal government in order to be eligible for the financial aid.

As the student progresses in the course, he has constantly with him his standardized training record, mentioned above, showing the shop work and classroom work completed and the quality of his accomplishment in both. After all phases are completed, which may be at the end of four years or earlier, the committee carefully checks the records, and if satisfactory, grants the student a diploma which

(TURN TO PAGE 226, PLEASE)

Save Pencil Work

Order and Sell CARTER PARTS by the Package!

Carter Carburetor Corporation
2820-56 North Spring Ave., St. Louis, Mo.

KINNEAR ROLLING DOORS

For truck bodies as well as buildings. Rugged, dependable. Steel slat curtain coils up quickly, out of the way. Built any size. Motor operation, if desired. Write for details.

The Kinnear Mfg. Co.
2100-20 Fields Ave.
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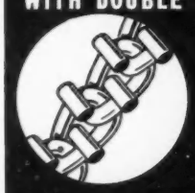
McKAY MULTI-GRIP CHAINS
WITH DOUBLE TRACTION BARS



Use McKay Multi-Grip Truck Chains. More traction! Positive grip! Longer life! Double economy!

The McKAY Co., PITTSBURGH, Pa., YORK, Pa.

AIR-GO 100% PETROLEUM PRODUCTS

MOTOR TONIC — Reduces maintenance and operating costs . . . results in more engine power, more mileage per gallon, less wear and repair, freedom from carbon formations, sludge, etc. Add to any motor oil.

GAS FLUID — Aids in reducing gasoline and oil consumption, prevents corrosion, assures cleaner top motors, reduces metal wear and loss, helps eliminate sticky valves. Complete details on request.

ALLEGANY OIL CO. 216 NO. CLINTON ST. CHICAGO 6, ILL.

Gear Pullers

GARAGE TOOLS

CARBON SCRAPER
CREEPER CASTERS
BUSHING REMOVERS
REAMERS

Cal-Van MACHINE PRODUCTS INC.

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AUTOPULSE
ELECTRIC FUEL PUMP

- Uninterrupted Schedules
- Instant Starting
- Greater Economy
- No Vapor Lock
- Added Protection

AUTOPULSE CORP., DETROIT

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

KATHANODE

THE ORIGINAL SPUN GLASS BATTERY

THE KATHANODE CORPORATION, CHICAGO, ILL.

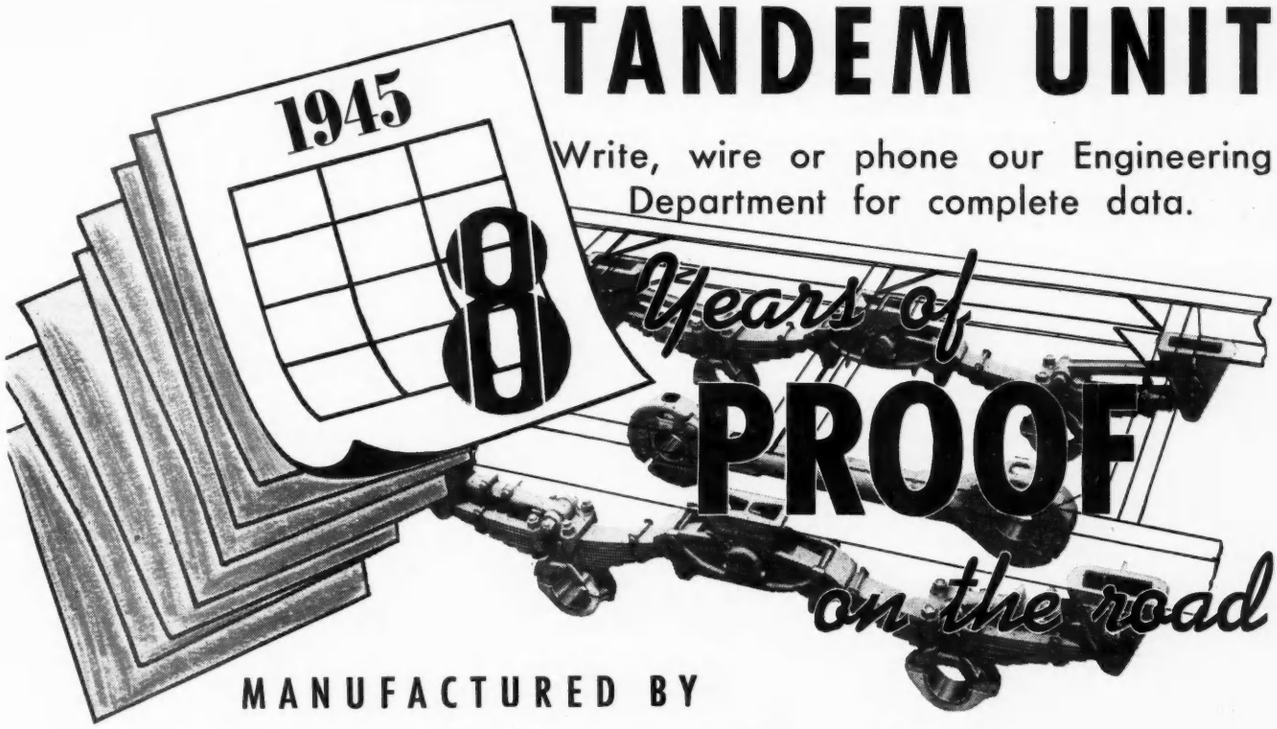
Specify KATHANODE for all battery replacements. Kathanodes cut operating costs in bus and truck service.

NO... WHEEL BOUNCE

NO... BRAKE CHATTER

With AMERICA'S OUTSTANDING TANDEM UNIT

Write, wire or phone our Engineering Department for complete data.



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MANUFACTURED BY

Standard Forge & Axle Company

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AXLES BRAKES FORGINGS TRAILER PARTS

UNDER LICENSE FROM UTILITY TRAILER MFG. CO. LOS ANGELES, CAL.

LOADABILITY — ROADABILITY

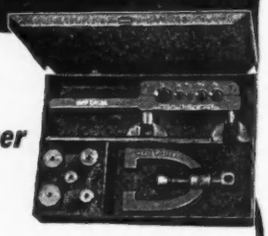
has long been one of the features of TUTHILL Leaf Springs. This fact reflects TUTHILL "Loadability"—strength, endurance, under varying load conditions. Resilience, i.e., springyness without bouncy-ness—toughness—ruggedness—all combine to make TUTHILL the Quality Spring.

We make both standard and special leaf springs. What are your requirements?

TUTHILL SPRING CO. 760 W. POLK ST. CHICAGO 7

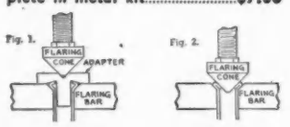
IMPERIAL
Double-Flaring Tool

. . . for steel and other metal tubing



● Ideal for brake, gas and oil line work. Overcomes tendency of welded steel tubing to crack when flared with ordinary flaring tool. First, tubing is belled, Fig. 1. Then flared in conventional manner, Fig. 2.

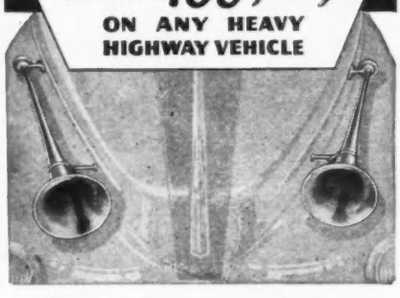
No. 93-FB Double-Flaring Tool complete in metal kit.....$7.00



Order From Your Jobber

THE IMPERIAL BRASS MFG. CO.
1209 W. Harrison St., Chicago 7, Ill.

A BUELL AIR HORN
is worth $100 yearly
ON ANY HEAVY HIGHWAY VEHICLE



- **BUELL High Pressure Air Horns Speed Up Schedules and Cut Down Costs!**
- **They get instant response . . . reduce maintenance costs by decreasing unnecessary stops, starts and slow downs.**
- **They keep the Highways open so that a steady cruising speed is maintained . . . 12% better road time is the result!**

TRUCK OPERATORS: BUELL High Pressure Air Horns are available NOW. Write us for information and catalog sheet.

BUELL MANUFACTURING CO.
2988 Cottage Grove Ave., Chicago 16

TRAINING PROGRAM

(CONTINUED FROM PAGE 224)

is issued by the Virginia Apprenticeship Council. It is conceded, however, that the individual training records, prepared throughout the course, are of far more value to the student than his diploma. For in these records a prospective future employer may see at a glance to what type of work the individual has been exposed and how successfully he has absorbed that exposure.

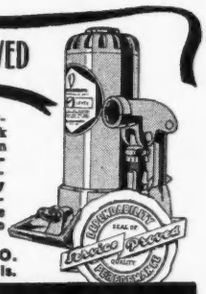
List of Tools

Quan.	Description	Price
1	Extension Bar 3/8" Sq. Dri Length OA 3"	$ .70
1	Extension Bar 3/8" Sq. Dri. Length OA 6"	.95
1	Extension Bar 3/8" Sq. Dri. Length OA 12"	1.15
1	Reversible Ratchet 3/8" Sq. Drive	3.15
1	Speeder Handle 3/8" Sq. Drive	1.45
1	Universal Joint 3/8" Sq. Drive	1.65
1	Socket 3/8" Opening 3/8" Sq. Drive	.45
1	Socket 7/16 Opening 3/8" Sq. Drive	.45
1	Socket 1/2" Opening 3/8" Sq. Drive	.45
1	Socket 9/16 Opening 3/8" Sq. Drive	.45
1	Socket 5/8" Opening 3/8" Sq. Drive	.45
1	Socket 11/16" Opening 3/8" Sq. Drive	.50
1	Deep Socket 5/8" Opening 3/8" Sq. Dr.	.65
1	Deep Socket 13/16" Opening 3/8" Sq. Dr.	.85
1	Nut Spinner Handle 1/2" Sq. Dr. 18 O.A.	2.95
1	Reversible Ratchet 1/2" Sq. Dr.	4.50
1	Extension Bar 1/2" Sq. Dr. Length OA 5"	.90
1	Extension Bar 1/2" Sq. Dr. Length 10"	1.25
1	Socket 7/16" Opening, 1/2" Sq. Dr.	.55
1	Socket 1/2" Opening 1/2" Sq. Dr.	.55
1	Socket 9/16" Opening 1/2" Sq. Dr.	.55
1	Socket 5/8" Opening 1/2" Sq. Dr.	.55
1	Socket 11/16 Opening 1/2" Sq. Dr.	.60
1	Socket 3/4" Opening 1/2" Sq. Dr.	.65
1	Socket 13/16 Opening 1/2" Sq. Dr.	.65
1	Socket 7/8" Opening 1/2" Sq. Dr.	.65
1	Heavy Duty Vacuum Grip Pliers 7"	1.50
1	Heavy Duty Vacuum Grip Diagonal Pliers 6"	1.65
1	Combination Feeler Gauge	1.95
1	Ball Point Hammer 1 Lb.	1.20
1	Boxsocket Wrench 3/8 x 7/16 Opening	.75
1	Boxsocket Wrench 1/2 x 9/16 Opening	.85
1	End Wrench 3/8" x 7/16	.80
1	End Wrench 1/2 x 9/16	.75
1	End Wrench 5/8 x 11/16	1.00
1	End Wrench 3/4 x 7/8	1.40
1	Screw Driven 4" Blade Length	.50
1	Screw Driven 8" Blade Length	.95
1	Screw Driven 4" Blade Length No. 2 Phillips So.	.75
1	Flat Chisel 7/16" Blade Width	.50
1	Flat Chisel 3/4" Blade Width	.85
1	Punch 1/8" Point	.50
1	Punch 5/16" Point	.80
1	Mechanikit 20" x 7 3/4" x 5 1/2"	5.25
		$49.90

END

(Please resume your reading on P. 57)

SERVICE-PROVED



YEARS of toughest service prove Blackhawk Hydraulics superior in safety, rugged dependability and utility. "Service-Proved" Seal found only on Blackhawks. Only complete line of hydraulic hand jacks—models up to 50 tons capacity.

BLACKHAWK MFG. CO.
Dept. 1136, Milwaukee, Wis.

BLACKHAWK

Originators and Manufacturers of

FLEXIBLE
HOSE ASSEMBLIES

for

Gasoline, Oil, Air, Water, Freon Gas, Carbon Dioxide and for both high and low pressure hydraulic lines

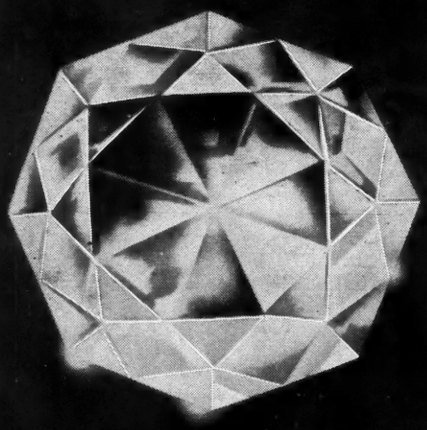
FLEX-O-TUBE COMPANY
Lafayette at 14th Ave., Detroit 14, Michigan

Available Trucks

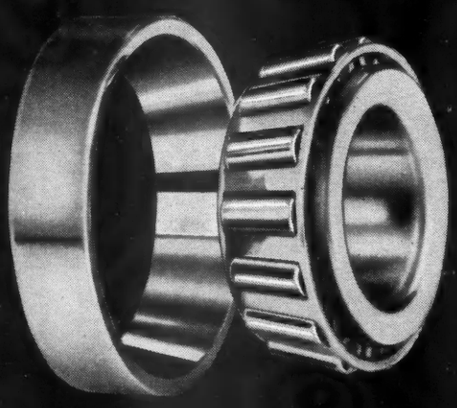
1½ TO 20 TONS
TRUCKS · TRACTORS
TRAILERS · BUSES
(SINCE 1910)
TELEPHONE—BRUNSWICK 1100
AVAILABLE TRUCK CO.
2501 ELSTON AVE.—CHICAGO 47, ILL.

BONNEY TOOLS

Bonney Forge & Tool Works
Allentown, Pa.



smoothness plus precision



Through hundreds of years the world's best diamond finishing experts have lavished all their skill on the development of precision processes for cutting, grinding and lapping diamonds.

Yet, the honing process developed by the Bower Roller Bearing Company within the last half dozen years has paralleled the results attained during centuries of diamond finishing.

Bower honing is not a lapping or polishing process, but is a procedure definitely controlled to remove amorphous metal down to the crystalline base metal. This honing process positively controls the accuracy and smoothness of the bearing surfaces.

In the final finish, accuracy and smoothness can be refined to 3 micro-inches (3 millionths of an inch). This allows Bower Roller Bearings to be permanently adjusted at the time of installation without the necessity of a running-in or wearing-in period.

And operating life is extended to the ultimate durability possible in any contacting metal surface.

BOWER
ROLLER BEARING CO.
Detroit 14 Michigan

BOWER ROLLER BEARINGS

Capacities from 28 to 50 gallons

EVERY GOOD TRACTOR OR TRUCK DESERVES A *Snyder* SAFETY TANK

+ ADD SAFETY, CAPACITY, DURABILITY
− SUBTRACT FIRE HAZARD, OPERATING COST
= ANSWER THE SNYDER SADDLE AND CYLINDER SAFETY TANKS, THE LAST WORD IN TRUCK AND TRACTOR FUEL TANK CONSTRUCTION

Capacities from 75 to 125 Gallons

SNYDER MANUFACTURING CO., P. O. BOX 14, BUFFALO, N. Y.
SNYDER TANK CORPORATION, P. O. BOX 2390, BIRMINGHAM, ALABAMA

MOHAWK TIRES
and Recapping Materials are both GOOD

The Mohawk Rubber Co., Akron 5, Ohio

TRUCK DECALS from PALM BROTHERS
require no pencil varnishing
WRITE FOR OUR CATALOG
•
The PALM BROTHERS DECALCOMANIA CO.
Cincinnati 12, Ohio, U. S. A.

Whiz
MOTOR RYTHM
an effective chemical tune-up
MOTOR RYTHM
A PRODUCT OF Hollingshead
LEADER IN MAINTENANCE CHEMICALS

MORE THAN STRAINS
Actually Cleanses Oil!
DELUXE Oil Filters
MORE THAN FILTERS
DE LUXE PRODUCTS CORP. LA PORTE, IND.

CCJ NEWSCAST

(CONTINUED FROM PAGE 108)

U. S. AXLE HAS NEW CATALOG

The Silver Anniversary Catalog of the U. S. Axle Co., Inc., Pottstown, Pa., has recently been released. Its 50 pages contain complete passenger car, truck and bus listings for replacement with axles and propeller shafts made by the company. Listings cover nearly all vehicles. Copies may be obtained free upon request.

IMPERIAL BRASS CATALOG OUT

Complete data on flexible fuel lines, brass fittings, fuel strainers, dash controls, flaring tools and tube cutters are included in the new automotive catalog just issued by the Imperial Brass Mfg. Co., Chicago, Ill. The catalog, showing some 1700 service parts and tools, is available upon request.

FILM ON WHEEL ALIGNMENT

The five major factors of wheel alignment are defined and described in a new 35 mm. sound-slide film entitled "Get the Angles," produced by Bear Mfg. Co., Rock Island, Ill. Arrangements for showings are being booked now. Running time is 25 min.

ALEMITE PUBLISHES NEW BOOK

"Alemite Answers," a new book published by the Alemite Division, Stewart-Warner Corp., Chicago, Ill., has been prepared to "expand the non-technical man's understanding of how to buy intelligently, and correctly apply, petroleum products."

(TURN TO PAGE 230, PLEASE)

Fred Prior, left, president of Prior Products, Inc., Dallas manufacturers of Prior Safety Tanks for trucks and buses, and D. H. Magee, right, of Clinton, Ill., vice president of the newly incorporated company

For Engine Bearings
Clutch Plates & Parts
King Bolt Sets
Monmouth is the name

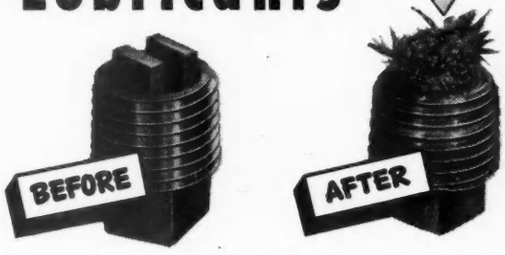
Check the wire on every job
Wirey Joe
AUTOMOTIVE CABLE
manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island

Specify
Claw
Double-Duty
TRUCK CHAINS
Columbus McKinnon Chain
CORPORATION
TONAWANDA, N. Y.

FRINK SNO-PLOWS
REG. U.S. PAT. OFF.
Both "V" TYPE and ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS
Write for catalog 38AC and 38BC with discount to truck dealers.
CARL H. FRINK, Mfr., CLAYTON, 1000 Isly, N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

GET *this* METAL

Out of Your Truck Lubricants



THE constant grinding action of the thousands of sharp metal particles which form as a result of ordinary wear is one of the major causes of bearing failures, transmission and rear axle troubles. Now, there is a sure, low cost way to eliminate breakdowns from this cause.

KEEP 'EM ON THE ROAD

Stop excessive wear resulting from abrasive metal, by installing Lisle MAGNETIC Plugs in place of ordinary drain plugs in the crankcase, transmission and rear axle. The unretouched photos, above, show how a powerful Magnet in the MAGNETIC Plug pulls metal out of gear case; keeps oil clean; reduces wear.

***FREE**—Sample plug for testing. Just tell us the make and model of vehicle in which you want to make test.*

LISLE CORPORATION
BOX 1017 Clarinda, Iowa

Lisle Magnetic **PLUGS**

RUST PROOF

Cooling systems up to 5 gallon capacity with

19¢ *for only*

RUST MASTER

NO MUSS—NO FUSS

Rust Master dissolves rust in entire cooling system—rust-proofs for a year—nothing harmful.

Rust Master *Chemical Co.* MFG. CHEMISTS
712 BEACON STREET, BOSTON, MASS.
THE SILENT PARTNERS OF MOTOR EFFICIENCY

Six Master dissolves carbon, sludge and gum — relieves sticky valves and frees rings. Saves gas.

JUST POUR—NO MORE

DE-SLUDGE

For 2,000 Miles Driving With

20¢

SIX MASTER

per 8-qt. crankcase

THOUSANDS IN USE

CHAMPION Safety TANKS

Mfg. by ALLIED Equipment Co., DETROIT

DISTRIBUTED BY

The TRUCKSTELL CO.

1672 Union Commerce Bldg., Cleveland.

To These Features

—add: Patented Brackets which permit mounting tank without drilling or welding—an exceptionally safe Four-Way Multi-Selector Tank Valve —an Optional Straddle Deck Plate — and you have the greatest value obtainable.

INVESTIGATE

Permalux

"KOLORFILM" DECALCOMANIA

FIRST IN { APPEARANCE ECONOMY DURABILITY

Still Made With DuPont "DULUX"

Write Today for details

THE PERMALUX COMPANY

900-10 West Lake Street, Chicago, Ill.

AMERICAN BOSCH

AVIATION & AUTOMOTIVE ELECTRICAL PRODUCTS

FUEL INJECTION EQUIPMENT

American Bosch Corporation

Springfield, Mass.

ARMSTRONG

Specialists in Quality Tires Since 1912

TIRES

NEW! BLOWOUT-PROOF RUBBER RIVETS SAVE TIRES

SPEAKER Rubber Rivets seal nail holes and small breaks. A quick pull on the wire needle makes a repair that outlasts the tire. Prevent fabric rot and blowouts with Rubber Rivets. Get some from your jobber today.

J. W. SPEAKER CORP.

Milwaukee 12, Wis.

CCJ NEWSCAST

(CONTINUED FROM PAGE 228)

This 224-page book is divided into seven chapters, each one treating in its entirety one phase of the subject of lubrication. Subjects covered include such points as petroleum and its chemistry, refining and testing of fuels and lubricants, application problems and solutions, and purchasing and selling.

At present the company has 200 copies of the publication on hand. The cost of the book is $3.00.

U. S. Rubber Announces Appointments

Appointments of district manager for new branches of the United States Rubber Co. have been announced. William O'Sullivan will manage the new branch in Jacksonville, Fla.; J. L. Updegraff will head the Cleveland, Ohio, branch, and M. M. Littlejohn will manage the new Indianapolis branch.

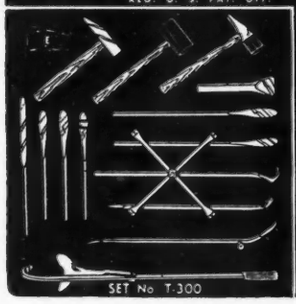
In addition E. J. Bassine has been appointed district manager for the New York district, replacing G. C. Gaillard, who has been assigned to the general office. E. B. Magowan, formerly assistant district manager at the Philadelphia branch, has been appointed district manager, while J. C. O'Gorman becomes manager of the commercial merchandising department at the general offices in New York.

(TURN TO PAGE 232, PLEASE)

"It's the boss, dear. He couldn't get hotel accommodations!"

KEN TIRE TOOLS

REG. U. S. PAT. OFF.



LEAD THE FIELD • ADVANCED DESIGN • QUALITY UNSURPASSED • SEE YOUR LOCAL JOBBER OR WRITE FOR LITERATURE •

KEN TOOL MFG. CO.

AKRON 5, OHIO

WAUKESHA Multi-Fuel ENGINES

DIESEL OIL GASOLINE BUTANE

ALL LIQUID OR GASEOUS FUELS

McKAY MULTI-GRIP CHAINS

WITH DOUBLE TRACTION BARS

Use McKay Multi-Grip Truck Chains. More traction! Positive grip! Longer life! Double economy!

The McKAY Co., PITTSBURGH, Pa., YORK, Pa.

FOR PROMPT COMPLETE SERVICE ON AUTOMOTIVE PARTS...

Your NAPA Jobber is a Good Man to Know!

NATIONAL AUTOMOTIVE PARTS ASSOCIATION

Detroit 1, Michigan

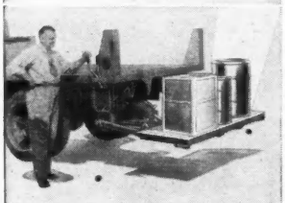
NAPA Assurance of Quality

Anthony HAS IT...

CONSTRUCTION EQUIPMENT THAT KEEPS TRUCKS ON THE MOVE

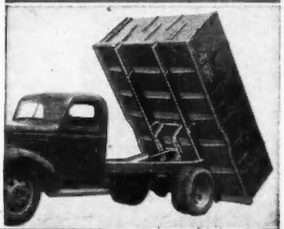
• ANTHONY "SUPER" HYDRAULIC HOISTS AND BODIES, up to 30 ton capacity—with "power speed lift" and "rubber restraining blocks," two of many features that explain the evident preference for Anthony equipment on the job.

• ANTHONY HYDRAULIC LIFT GATE . . . one of the remarkable new war-developed pieces of equipment for loading and unloading. Raises and lowers loads from ground to truck level.



• ANTHONY MATERIAL SPREADER . . . rugged, all steel; for road building, maintenance and ice control.

• ANTHONY HYDRAULIC PLATFORM "BOOSTER" HOISTS, especially designed to make dump bodies out of flat bed trucks.



Write for complete details on any Anthony product. Available through all truck dealers and Anthony distributors.

ANTHONY HYDRAULIC

Manufactured by **ANTHONY CO.** Streator, Ill.

MAINTENANCE CLEANING SHORT CUTS FOR AUTOMOTIVE SHOPS

Low-Cost Oakite Cooling System Cleaning Improves Engine Performance

NOW is the time to de-winterize cooling systems and radiators . . . insulating deposits that prevent proper heat transfer MUST be thoroughly removed or engines stay sluggish . . . gas and oil consumption increases! You can QUICKLY, SAFELY clean cooling systems and radiators . . . make them function normally by using a simple Oakite technique. All that is necessary is to circulate recommended solution of performance-proved

OAKITE PENETRANT

through cooling system as directed. This widely-used treatment effectively removes all dirt, grease, loose scale and rust . . . without harm to metal surfaces or rubber hose connections. Oakite Penetrant increases heat transfer efficiency . . . motors run better and smoother . . . consume less oil and gasoline.

Free 12-Page Manual . . .

. . . describes how Oakite Penetrant is used for this and many other essential maintenance jobs such as degreasing repair parts, removing grease and muck deposits from floors and work pits, steam-detergent cleaning of motors and chassis. FREE copy gladly sent on request. Write us TODAY!

OAKITE PRODUCTS, INC., 26D Thames St., NEW YORK 6, N. Y.

Technical Service Representatives Conveniently Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* **CLEANING**

MATERIALS · METHODS · SERVICE · FOR EVERY CLEANING REQUIREMENT

The right braking material for any commercial vehicle

CUSTOM-BUILT SETS
CBB SETS
THERMO-BLOCKS

Thermoid

THERMOID COMPANY · TRENTON, N. J.

For a Smooth, Safe Ride at Lower Cost, Use

CLE-AIR

Hydrau-Matic Shock Eliminators

★ ★

The Cleveland Pneumatic Tool Co.
Cleveland, Ohio

WALKER
LEADS IN
JACKS

Timken Bearings are the first choice of engineers and fleet operators everywhere because of their unusual efficiency and outstanding performance. Be sure the trade-mark "TIMKEN" is on every bearing you buy!

THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO

GET LONGER, TROUBLE-FREE PERFORMANCE
with
Pedrick
precisioneered
PISTON RINGS
in guaranteed
ENGINEERED SETS
For every Car, Truck, Bus and Tractor

CCJ NEWSCAST

(CONTINUED FROM PAGE 230)

Mansfield Tire Expands

Expansion of sales forces and extension of services has been announced by the Mansfield Tire & Rubber Co., Mansfield, Ohio, with the following personnel changes: Edward E. Stevens, as assistant general sales manager; S. E. Shepard, as director of merchandising; Charles F. Orr, Jr., as district sales manager covering Tennessee, Alabama, Georgia and Florida.

New Special Truck Tire Sales Representatives include: Hal C. Smith, operating under J. W. Boncer for the area comprising Southern N. Y., N. J., Eastern Pa., Del., Md. and the District of Columbia; Charles P. Sniffen, Jr., operating under J. W. Kearns for the area comprising Northern N. Y. and all of the New England States; Richard R. Holton, working under Walter J. Gray for the area comprising Utah, Nev., Idaho, Wash., Ore. and Calif.; N. C. Rundio, working under Carl B. Gibson for the area comprising Ill., Iowa, Mo., Neb., Kan., Wyo. and Colo.; O. C. Alexander, operating under Charles F. Orr, Jr., for the area comprising Tenn., Ala., Ga. and Fla.; H. A. Beatty, working under E. L. Swanson for the area comprising Wis., Minn., N. D., S. D. and Mont.; R. C. Boone, working under R. K. Houston for the area comprising Ark., La., Tex., Okla., N. M. and Ariz.; F. D. Winfield, working under D. S. Rainey for the area comprising W. Va., Va., N. C. and S. C.; Walter C. Leo, working under F. D. Boals for the area comprising Ohio, Mich., Ind., Ky. and Western Pa.

(TURN TO PAGE 234, PLEASE)

George J. Barsa is the new vice president and general manager of Lempco Automotive Inc., new subsidiary of Lempco Products, Inc.

E. Dudley Kress, newly appointed assistant sales manager of the Ditzler Color Division of Pittsburgh Plate Glass Co., Detroit, Mich.

F. O. Terrill has returned to the Kroger Grocery and Baking Co. in Cincinnati and has been appointed general manager of the firm's warehouse and transportation department

OVERSIZE REAR WHEEL
STUDS
for all
TRUCKS
Send for Catalog
Order from your Jobber

CHAMP-ITEMS
CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis, Mo.

CAMPBELL
Lug-Reinforced
TIRE CHAINS
THE CHAIN WITH THE SAW-TOOTH GRIP
Greater Mileage Greater Safety
INTERNATIONAL CHAIN & MFG. CO., YORK, PA.

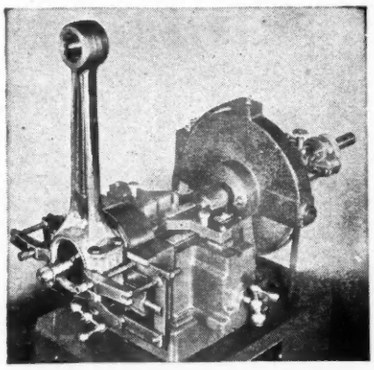
Specify
Velvetouch
BIMETALLIC FRICTION MATERIAL
for
CLUTCHES AND BRAKES
THE S. K. WELLMAN CO.
CLEVELAND, OHIO

HEAVY DUTY MOTOR TRUCKS
AND
GASOLINE ELECTRIC
GENERATING SETS
DUPLEX TRUCK COMPANY
Lansing, Michigan

COMPANION PRODUCTS
for Replacement Service
GLOBE *Spinning Power* BATTERIES
Full Spark PLUGS

GLOBE-UNION INC., Milwaukee 1, Wis.

TOBIN-ARP
Rod Boring Attachment



Is Fast Accurate Compact

Bores semi-finished babbitted rods, inserts in the rod and the rod forging itself. Designed to fit our Shell Bearing Boring Machine. Convenient to use. Handles all rods up to and including R. D. 8 Caterpillar Diesel. For resizing V8 Ford rods quickly, it can't be beat.

Write for complete details on it, also ask for particulars on our Shell Bearing Boring Machine and Line Boring Machine.

TOBIN-ARP MFG. CO.

2845 Harriet Ave. S. Minneapolis 8, Minn.

UNIVERSAL
Truck and Tractor
Tire Removing Tool

Jack Not Included

Adjustable for 16 to 24 inch Rim or Wheel type

$99.75 F.O.B. Birmingham

Gets any tire off without hammering.

Time and Labor Saver

Sold exclusively through jobbers and distributors

Manufactured and Distributed by

UNIVERSAL TIRE TOOL CO., Inc.

502 Empire Bldg., Birmingham 3, Ala.

★

The New Tinnerman
HOSE CLAMP

Latch by hand

Lock with pliers

Remove with screwdriver

SPEED CLAMPS on aircraft oil separator pump.

SPEED CLAMP ADVANTAGES

1. One piece—no bolts, gears, thumbscrews.
2. Exclusive, self-locking, ratchet design.
3. Faster and easier to install or remove.
4. Uniform pressure provides leak-proof grip.
5. Low profile—no protruding mechanism.
6. May be used over and over again.

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TINNERMAN PRODUCTS, INC.

2020 Fulton Road, Cleveland 13, Ohio

Speed Nuts

FASTEST THING IN FASTENINGS... OVER 3000 SHAPES AND SIZES

with MORFLEX COUPLINGS
FOR ACCESSORY DRIVES

Specially designed rubber trunnion biscuits cushion shock, isolate vibration, compensate for misalignment, step up performance. Need no protection against dirt or weather, no lubrication. Sizes from 2" to 12" diameter for various capacities.

MORSE CHAIN CO. • Detroit 8, Mich. • Ithaca, N.Y.

A Borg-Warner Industry

MORSE COUPLINGS and DRIVE SHAFTS

Dart Trucks
HEAVY DUTY FOR OFF THE HIGHWAY SERVICE
— Specially Designed for —
Coal Mining—Iron Ore Mining—Copper Mining—Pit and Quarry—Logging—Oil Fields—Etc.
It Costs No More for Trucks Specially Built to Fit Your Needs. Have Our Engineers Visit and Analyze Your Operation.
DART TRUCK COMPANY
KANSAS CITY, MO.

VELVAC
POWER BRAKES SINCE 1930
Better Built for Better Service
REPRESENTED THROUGHOUT U. S. AND CANADA
VELVAC, INC. – DETROIT 16, MICH.

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—then write for FREE COMPRESSOR BOOKLET on "More Profitable Service" ...also ask for FREE Curtis Maintenance Check Chart.
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of Curtis Manufacturing Company
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THE COMPLETE LINE THAT COMPLETELY SATISFIES

THE FITZGERALD MFG. CO., TORRINGTON, CONN.
FITZGERALD GASKETS

DE VILBISS
Spray-Painting Equipment — Spray Booths — Canopy Exhaust Systems — Exhaust Fans — Air Compressors — Hose and Hose Connections — Oil Guns
Distributors or factory sales and service representatives everywhere
THE DeVILBISS COMPANY
Toledo 1, Ohio

CCJ NEWSCAST

(CONTINUED FROM PAGE 232)

Factory Appointments

Lt. Col. Elbridge Teel, after nearly four years of military service, has rejoined the White Motor Co., in the capacity of White Horse Sales & Development engineer. Emmett A. Darby has been named manager of the Dallas branch of the company.

David W. Lee has been appointed to head the truck advertising division of the Ford Motor Co.

R. W. Fitzgerald has been promoted to Western Division manager of the Goodyear Tire and Rubber Co. He will have headquarters in Los Angeles.

Sidney G. Harris has returned from 42 months in the Army to his former position as manager, Sales Engineering Dept., Petroleum Solvents Corp., New York City.

Frank R. Markley has been appointed general sales manager of the Sun Oil Co., Philadelphia, Pa. Maximilian H. Leister has been named general manager of Sun's motor products department.

Perc C. Birks is the newly appointed southeastern territory manager for the New Britain Machine Co., New Britain, Conn.

Dave Blount has rejoined the Magnus Chemical Co. of Garwood, N. J., as assistant sales manager.

David A. Coulter rejoined the Basic Manufacturers' Sales Corp., New York City, as vice president and director of marketing.

Eugene E. Gloss is the new service manager of ball bearings for the New Departure Division of General Motors Corp.

Monarch Offers Catalog

A new 4-page catalog has just been released by the Monarch Governor Co., Detroit, Mich., which besides describing a new model of governor that is centrifugally controlled, includes installation instructions and parts list and prices.

(TURN TO PAGE 236, PLEASE)

R. T. MacLaren, recently appointed to handle the Michigan sales territory for the Pennsylvania Rubber Co. of Jeannette, Pa.

Rex C. Hall, new general manager of automotive sales of the Sherwin-Williams Co., Cleveland, Ohio

Gatke
CUSTOM-BILT BRAKE LININGS
BLOCKS SETS ROLLS SHEETS
GATKE CORPORATION
228 N. La Salle St., Chicago 1, Ill.

FLEET OWNERS!
DECALCOMANIA TRANSFERS & METAL SIGNS FOR TRACTORS & TRAILERS
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YOUR TRADEMARK REPRODUCED ANY SIZE & IN COLORS
•
SKETCHES & DESIGN SUGGESTIONS FOR YOUR APPROVAL
WOLVERINE PROCESS CO.
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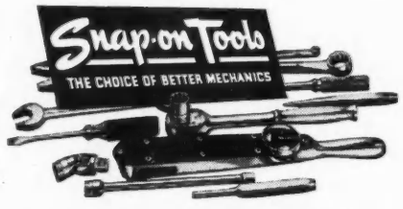
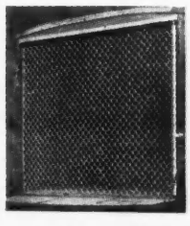
UNITS AVAILABLE
GRICO
2-AXLE DRIVE
19842 W. Eight Mile Rd.
Detroit 19, Michigan

Snap-on Tools
THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION
8026-C 28th AVE. KENOSHA, WIS.

ZEHR
COLLAPSIBLE TRUCK BACKS

Safe . . . easy and simple to handle. Zehr Truck Backs are all-welded steel designed for great strength and long continuous service.
They are theft-proof, rust-proof and flexible.
Write for details and prices.
ZEHR PRODUCTS COMPANY
2130 East Hazzard Street, Philadelphia 25, Pa.

4 methods of filling gasoline tanks

1 the dribble (OBSOLETE)
2 the fill-till-you-spill (OBSOLETE)
3 the blowback (OBSOLETE)
4 the VENTALARM (THE MODERN METHOD)

VENTALARM is the only method which (1) assures filling at maximum pump speeds (2) to the proper safe level *within* the tank, thereby (3) establishing an expansion zone within tank.

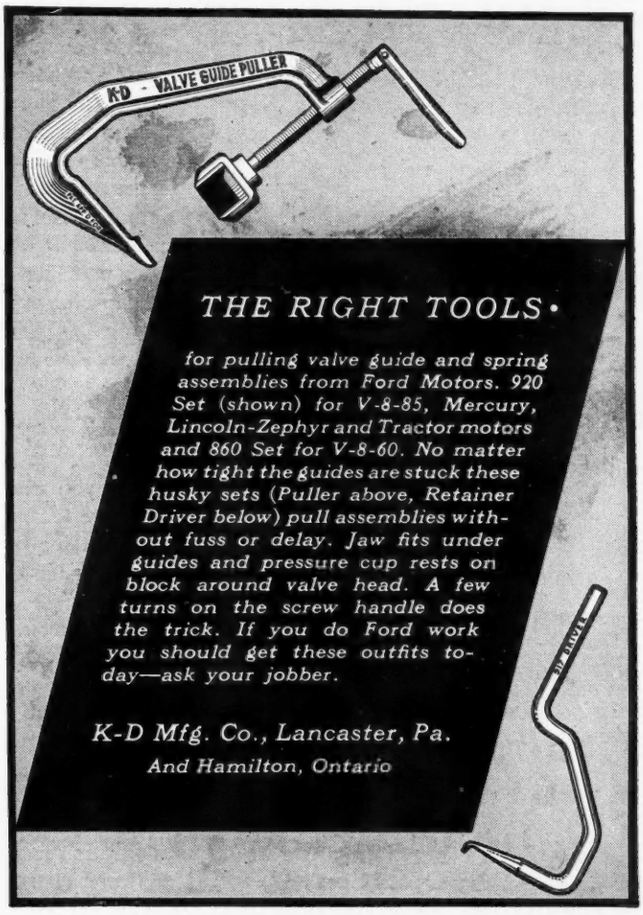
VENTALARM is original equipment on 12 makes of buses, trucks, taxicabs, and passenger cars. Specify Scully VENTALARM when you order new automotive equipment.

SCULLY

VENTALARM

The Whistling T.M.REG.U.S.PAT.OFF. GAS TANK SIGNAL

SCULLY SIGNAL COMPANY, 88 FIRST ST., CAMBRIDGE 41, MASS.



THE RIGHT TOOLS

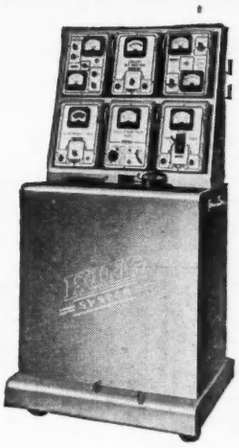
for pulling valve guide and spring assemblies from Ford Motors. 920 Set (shown) for V-8-85, Mercury, Lincoln-Zephyr and Tractor motors and 860 Set for V-8-60. No matter how tight the guides are stuck these husky sets (Puller above, Retainer Driver below) pull assemblies without fuss or delay. Jaw fits under guides and pressure cup rests on block around valve head. A few turns on the screw handle does the trick. If you do Ford work you should get these outfits today—ask your jobber.

K-D Mfg. Co., Lancaster, Pa.
And Hamilton, Ontario

Here is the NEW "KING" UNIT TESTER

Makes ALL Motor and Ignition Tests

The "KING" G-100 Unit Tester can be used to advantage by large or small repair shops including fleet owners and gas stations. The individual units make it possible to make bench tests, road tests and can be used in any part of the shop. The following units are shown — (1) Tachometer and Cam Angle Tester (2) Exhaust Gas Analyzer (3) Generator Voltage Regulator Tester (4) Condenser Tester (5) Coil-Ignition Tester (6) Spark Plug Tester (7) Vacuum and Fuel Pump Gauge (shown on shelf). Units may be purchased separately.



Ask Your Jobber or Write Us

The ELECTRIC HEAT CONTROL Co.
9127 INMAN AVENUE • CLEVELAND 5, OHIO
GOOD "KING" PRODUCTS SINCE 1914

Judge JONES TACHOMETERS *by the Companies that use them...*

Wherever accurate checking of engine speeds count . . . prominent truck manufacturers and users rely on JONES TACHOMETERS. In adjusting and checking motor truck governors, they save time by eliminating road tests, and help protect precious motors by indicating engine performance efficiency. They assure more mileage per truck dollar investment by helping to keep motors out of repair shops.

Multiple Range Jones Portable Hand Tachometer. (Single range also available).

Users include Seaboard Freight Lines, Standard Oil Co. of La., N. Y., N. J., U. S. Army Air Forces, U. S. Navy, Socony Vacuum Oil Co, General Motors Truck and Coach, American Fire Apparatus, Autocar Co., Atlantic Refining Co., International Harvester Trucks, Mack Trucks.

Write for Literature

Sales and Service Representatives in principal cities.

JONES MOTROLA CORP.
438 FAIRFIELD AVENUE STAMFORD, CONN.

CCJ NEWSCAST

(CONTINUED FROM PAGE 234)

Bendix-Westinghouse Announces Appointments

The Bendix-Westinghouse Automotive Air Brake Co. announces the following appointments: assistant sales manager, S. Johnson, Jr.; eastern regional manager, A. R. Leukhardt; southeastern regional manager with headquarters in Atlanta, E. W. McKay.

A. E. Wolfe assumes regional managership with the following assistant managers comprising his staff: W. L. Collins, in charge of the western region; J. F. Shumaker, in charge of the central region and J. V. Ralston, in charge of the mid-west region. At the general offices in Elyria, D. H. Robinson assumes the post of service manager, H. W. Jackson, assistant service manager and D. W. Scott, advertising and publicity manager.

END

(Please resume your reading on P. 110)

HIRING VETERANS

(CONTINUED FROM PAGE 53)

4. Do you want the same job you had before the war?

5. What job or jobs do you think you would be best suited for after you return?

This is the kind of employer-employee relationship that brings its reward—a sound investment in a most important commodity—fidelity to the organization.

Veteran demobilization is proceeding at a fast pace. It places squarely before the employer the problem of reintegration and assimilation of new and former personnel; the necessity of having in readiness all possible practical plans for veteran reorientation. How industry proposes to use newly acquired skills and knowledges to make the most of additional experiences gained, will determine how effectively the veteran is placed and the maximum profit to accrue to the employer from such effective utilization of manpower.

Let me urge individual business men and corporations to strengthen their ties with former employees in the service. Write to them. Bring them up to date on your peacetime plans. Discuss with them the future of the plant and their future in it.

END

(Please resume your reading on P. 54)

HOOF FULL POWER GOVERNORS

SEND FOR FREE BOOKLET
HOOF PRODUCTS COMPANY
6343 SO. LARAMIE AVENUE, CHICAGO 38, ILL.

VITAL TO—

- Low Mileage Costs
- Easy Operation
- Maintained Schedules

SKF
BALL AND ROLLER BEARINGS

Safety is Free—Use it Without Stint!

AMERICAN SAFETY TANK CO.
KANSAS CITY, MO.

KEEP YOUR VEHICLES MOVING ECONOMICALLY with HALL VALVE SERVICING EQUIPMENT

Ask Your Jobber or write
THE HALL MFG. COMPANY
TOLEDO 7, OHIO

THE DAVISBILT PRODUCTS CO.
DAVISBILT

Engineering exclusively in the field of fluid carriers. Truck tanks, frameless trailers and semi-trailers.

★ Cincinnati, Ohio ★

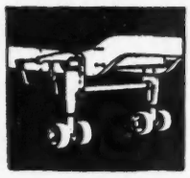
Fast, Safe Parts Cleaning

Kelite Parts Cleaner for pistons, carburetors, fuel pumps and other small parts—now available in convenient six gallon container—with or without parts tray as desired. Ask for free demonstration.

KELITE

AUSTIN

THE ACCEPTED STANDARD . . .



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Write for complete information on "SAFETY PROPS" and FIFTH WHEELS

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DETREX CORPORATION

Vapor Degreasing Equipment

Solvents • Alkalis • Emulsions

Metal Parts Washers

DETROIT, MICHIGAN